



Research Product 98-12

**Direct and Lead Units During Preparation
for the Battle (Battlefield Function 19)
as Accomplished by an Engineer
Battalion Supporting a Heavy Brigade
Volume 2: Assessment Package**

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December 1997

Armored Forces Research Unit

U.S. Army Research Institute for the Behavioral and Social Sciences

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14. ABSTRACT (<i>Maximum 200 words</i>): The purpose of the overall research program was to document the synchronization required by command and control tasks performed within the armored brigade, to include combat support and combat service support units. The immediate application of the documentation was to support developers of staff training in two related projects: Battle Staff Training System and Staff Group Trainer. The documentation was also intended to assist with the planning and execution of collective training. The documentation approach was to apply function analysis (FA) techniques for battlefield functions (BFs) in the Command and Control battlefield operating system. Thirteen FAs were developed for the brigade headquarters and four supporting units: direct support field artillery battalion, engineer battalion, forward support battalion, and air defense artillery battery. The FAs were revised through a formative evaluation process that included internal review and successive external reviews by combat training centers, proponent agencies, and a review council representing potential users of the FAs. The final products include the FAs, a user's guide, and assessment packages for the BFs. This report provides the assessment package for BF 19 as performed by the engineer battalion supporting a heavy brigade.						
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FOREWORD

One of the goals for the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is to facilitate the development of training strategies that will serve the needs of the combined arms team today and into the 21st century. The indispensable foundations, the cornerstones, for meeting this goal are solid information and data bases. One such base is a set of comprehensive descriptions of how soldiers accomplish their missions. Many task descriptions have been developed where the focus is on activities within a particular Battlefield Operating System (BOS); these are often further narrowed to one BOS element within one echelon. What have been lacking are function analyses along with task descriptions that have a broader BOS perspective; one which focuses not only on intra-BOS relationships, but also the relationships of that BOS with other BOSs in accomplishing the overall mission. It is this latter perspective which is needed, for example, to define training requirements and strategies for combined arms operations.

The assessment procedures described in this report are based on a function analysis resulting from one of three efforts conducted under the ARI project, "Innovative Tools and Techniques for Brigade and Below Staff Training (ITTBBST)." The work in this part of ITTBBST is the fifth in a series of ARI projects directed at analyzing the vertical and horizontal synchronization required by combined arms operations. All of the projects have analyzed functions, previously labeled "critical combat functions (CCFs)" and now labeled "battlefield functions (BFs)." The previous projects analyzed: all BFs performed by a heavy battalion task force; a sample of seven BFs performed by an armored brigade; and the integration of fire support BFs as performed by an armored brigade and at echelons higher than brigade. The research in this project analyzed BFs in the Command and Control BOS. Separate coordinated analyses of these BFs were performed for the armored brigade headquarters and four types of supporting units, one of which is the Engineer Battalion.

The analyses developed in the project have been used in the development of staff training in related projects within the ITTBBST program. In addition, U.S. Army Training and Doctrine Command (TRADOC) representatives have identified a variety of applications by TRADOC training and other developers as well as potentials for collective training management.


ZITA M. SIMUTIS
Technical Director

ACKNOWLEDGMENTS

The assessment package contained in this volume is based on the battlefield function analysis presented in Volume 1. That analysis benefited from considerable dedicated effort on the part of many persons. The efforts of a few of these many persons are specifically and gratefully acknowledged here. An especially key person was MG (Ret) Lon E. Maggart, Commanding General of the U.S. Army Armor Center (USAARMC). Prior to and during the conduct of this effort, he contributed greatly to definition of training needs and concepts in support of Force XXI. He saw that battlefield functional analyses could provide a valuable foundation for Force XXI training development efforts; hence, MG (Ret) Maggart strongly backed these efforts.

COL G. Patrick Ritter and LTC Marvin K. Decker, acting in accordance and agreement with MG (Ret) Maggart's vision, vigorously pursued battlefield function analysis efforts and persevered in ensuring their application to Force XXI training developments. COL Ritter, Director of Directorate of Training Development and Doctrine (DTDD) at USAARMC, and LTC Decker, Chief of DTDD's Force XXI Training Program (FXXITP) office, ensured implementation of necessary actions, and the participation of military subject matter experts and potential users of function analysis products as needed to assure quality outcomes.

Among many participants in performing the analyses themselves, and validating their integrity and validity, were members of the Directorate of Training at U.S. Army Engineer School (USAES), DTDD at USAARMC, and Operations Group at the National Training Center (NTC). Final recommendations and approval of these analyses were provided by proponents and users constituting the Force XXI Review Council. Members of the Review Council included: COL G. Patrick Ritter and LTC Marvin K. Decker, USAARMC; LTC James R. Harrison, U.S. Army Armor School (USAARMS); COL Philip Federle, USAES; LTC David M. Annen, U.S. Army Field Artillery School; LTC Larry Newman, U.S. Army Air Defense Artillery School; LTC Roger F. Murtie, National Training Center; LTC Gilbert Pearsall, Joint Readiness Training Center; COL Roger W. Jones, TRADOC Program Integration Office-Army Battle Command System; and COL Robert J. Fulcher, 29th Infantry Regiment.

The research for and preparation of this report benefited immeasurably from the assistance provided by members of the U.S. Army Research Institute. Specifically, the authors would like to acknowledge Dr. Kathy Quinkert for her continual support and guidance. As Contracting Officer's Representative, she interfaced with the FXXITP and the Army audience continually in providing program intent. Additionally, Ms. Dorothy Finley is acknowledged for serving as a peer reviewer for the product. She offered constructive comments that have improved both the content and style of the report. Also, special recognition is given to Ms. May Throne, a Consortium Research Fellow from the University of Louisville assigned to Fort Knox, and Ms. Lori Cracknell. Their never ending efforts to assist in the formal production of this report will not soon be forgotten.

DIRECT AND LEAD UNITS DURING PREPARATION FOR THE BATTLE (BATTLEFIELD FUNCTION 19) AS ACCOMPLISHED BY AN ENGINEER BATTALION SUPPORTING A HEAVY BRIGADE VOLUME 2: ASSESSMENT PACKAGE

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INTRODUCTION

The results of the Army Research Institute's examination of battlefield functions (BFs) relevant to a brigade combat team's combined arms operations are in a series of two volume sets. These sets cover brigade headquarters and the supporting units of air defense artillery battery, engineer battalion, field artillery battalion, and forward support battalion. Volume 1, Function Analysis, identifies and describes information and tasks necessary to accomplish the function. The analysis is targeted at planning and conducting collective training. Volume 2 provides an Assessment Package. It implements an assessment approach that identifies the purpose of the unit's action in relation to the function. This provides a basis for appraising the performance of the function and the outcomes resulting from it. The assessment package is intended to support the conduct of a training event, such as a field training exercise (FTX) or command post exercise (CPX). The package assists assessment planning, data collection, and using the collected data in the conduct of after action reviews (AARs). The materials assume skilled observers who can quickly identify when a unit is performing especially well or not, and, if not, the nature of the problem. Nothing in the Assessment Package can substitute for that expertise. The package adds value to two aspects of assessment. First, consistency in the assessment of multiple observers is facilitated through the consideration of the same outcomes and tasks. Second, efficiency in the assessment and AAR process is enhanced.

This assessment package is for the engineer battalion supporting a heavy brigade. It is organized to allow a commander or other observer to consider performance at several levels associated with increasingly focused questions:

- Did the unit achieve the purpose of the BF (e.g., for BF 19, to provide leadership, direction, command, and control during preparation for the battle)?
- If the purpose was not achieved, which outcomes did not occur? (e.g., Did subordinate leaders demonstrate an understanding of the critical elements of their own mission and mission essential tasks, the brigade mission, and the brigade commander's intent?)
- If an outcome did not occur or if performance was exemplary, what components of the outcome (e.g., backbriefs, rehearsals) or clusters of tasks (e.g., rehearsal tasks related to level of participation, priority of tasks, and realism) were notable strengths or weaknesses?

The tools provided in this Assessment Package include:

- **Worksheet:** This provides a means to record brief answers to each of above three questions.
- **Assessment Strategy and Assessment Scale:** The Strategy section advises where assessment personnel should be stationed to both observe performance, and review incoming information and outgoing products. The Assessment Scale can be used to assign evaluative ratings to both observations and products.
- **Outcome Assessment Observations and Diagnosis Aids:** These forms guide observers in making their evaluative ratings and then in further specifying, or diagnosing, any weakness in the observed performance.
- **Product Review Measures of Effectiveness:** These forms provide a means for collecting information regarding each of the products. They identify the products to be reviewed, which items to evaluate, and the information to be recorded.

Planning Assessment

The Assessment Strategy tool, briefly noted above, lists all outcomes that could be addressed, suggests where observers should be located, and specifies activities and products to be observed. The strategy helps commanders decide which outcomes should be addressed, guides the estimate of the number of observers and types of enemy forces required, and identifies the relevant assessment tools in the package (e.g., measures of effectiveness, outcome assessment guides, and diagnostic aids).

Conducting AARs

In assessing the training and organizing the AAR, the commander or observer progresses through three decisions. The first decision is whether the function was accomplished and if it should be addressed in the AAR. This decision is typically based on whether the unit accomplished the purpose of the function and the outcomes that support the purpose. The next level of choice is the selection of function outcomes that are appropriate for the AAR. This analysis is supported by objective measures in the Assessment Package's tables and a framework for systematic expert judgment concerning performance related to the outcome. The third level of selection concerns the specific behavior related to the outcome that was pivotal to the unit's success or failure. This selection is aided by data collected in accordance with the observation and product review guides for each component. In complex outcomes, the performance requirements are broken into components to help the commander or other observers focus their attention. In all cases, related tasks and supporting tasks are summarized to describe behavior required to achieve the outcome. Two types of measures help provide the desired consistency and efficiency.

Outcome Assessment Guides. These guides usually require the commander or observer to be present to watch the unit's actions and judge the results. Tasks and supporting tasks associated with each outcome are grouped into likely strengths or weaknesses. The guides are supported by diagnostic aids tied to the function analysis in Volume 1. The diagnostic aids list the tasks and supporting tasks that apply to the outcome components and task summaries.

Product Measures of Effectiveness. These measures help anchor the assessment with objective data. The tables associated with the measures of effectiveness should be completed for each event that covers the relevant outcomes. Over time, the measures will provide a context for showing how performance compares with other units or with previous performance by the subject unit. Many of the measures can be completed based on products, so the commander or observer does not have to view the performance. There should, however, be a mechanism in place to collect and process the information before the AAR.

WORKSHEET

MISSION _____
 DATE _____
 UNIT _____

Briefly state the engineer brigade and armored brigade commanders' intents for this mission in the box below.

Engineer brigade commander's intent:
Armored brigade commander's intent:

PURPOSE OF THE BF: To provide command, leadership, and control of the engineer battalion during the preparation phase to set the conditions to accomplish the engineer mission within the engineer and armored brigade commanders' intents.

Did the engineer battalion commander and staff achieve this purpose? (Circle one) YES NO
 If this performance exceeded the standard, please describe any techniques that enabled superior performance. These are techniques that you believe should be cited in the engineer battalion AAR and, perhaps, relayed through lessons learned agencies to be shared with the rest of the Army.

--

Outcome	Achieved?	Notes
OUTCOME 1: The engineer battalion command posts (CPs) maintain continuous communication with higher, adjacent, and subordinate headquarters.	Y N	
OUTCOME 2: The battalion commander, staff, and other key individuals within the engineer battalion receive, evaluate, and process timely and accurate information on the adherence to timelines and quality of battle preparation.	Y N	
OUTCOME 3: Tactically sound recommendations are developed and critical information is communicated by the battalion staff and subordinate leaders.	Y N	
OUTCOME 4: Sound (feasible, suitable, acceptable) decisions are made by the engineer battalion commander and others within the engineer battalion.	Y N	

Outcome	Achieved?	Notes
OUTCOME 5: Affected units and personnel receive relevant direction, changes, and refinements to plans in time to perform troop leading procedures and required preparation.	Y N	
OUTCOME 6: Subordinate leaders demonstrate an understanding of the critical elements of their own mission and mission essential tasks, the engineer (Engr) battalion (Bn) mission, and the Bn Commander's (Cdr's) intent.	Y N	
OUTCOME 7: Soldiers and units are disciplined and are motivated to accomplish the mission.	Y N	

ASSESSMENT STRATEGY

Locations to observe unit performance and aspects of that performance relevant to assessment are suggested for each outcome. The suggested locations and focus/focuses are not meant to be an exhaustive or all inclusive list.

Outcome	Location and Focus of Assessment
<p>OUTCOME 1: The engineer battalion command posts (CPs) maintain continuous communication with higher, adjacent, and subordinate headquarters.</p>	<p>Focus is on operating and monitoring nets. (Use Table 1)</p> <ul style="list-style-type: none"> • At engineer battalion tactical (TAC), main CP, and rear CP during preparation phase to check communications status. • At selected higher, adjacent, and subordinate headquarters (HQ) to confirm status of communications. • At engineer battalion main CP and rear CP during preparation phase to check security of CPs.
<p>OUTCOME 2: The battalion commander, staff, and other key individuals within the engineer battalion receive, evaluate, and process timely and accurate information on the adherence to timelines and quality of battle preparation.</p>	<p>Focus is on situational awareness: Staff collection and use of information, updating of operations and intelligence products, and monitoring of preparation activities. (Use Tables 2 and 3)</p> <ul style="list-style-type: none"> • With opposing forces (OPFOR) and subordinate units to identify changes to mission, enemy, terrain, troops, and time available (METT-T) conditions. • With engineer battalion staff at CPs to monitor obtaining, evaluating, incorporating, and transmitting information and to check for updates to products • With commander to monitor information he receives. • At subordinate units to check progress of preparation tasks. • At engineer battalion CPs to check accuracy of records on status of preparation.

Outcome	Location and Focus of Assessment	
<p>OUTCOME 3: Tactically sound recommendations are developed and critical information is communicated by the battalion staff and subordinate leaders.</p>	<p>Focus is on the staff's providing critical information and recommendations. (Use Tables 2, 3, 5, and 8).</p> <ul style="list-style-type: none"> • With executive officer (XO) to monitor information flow, receipt of responses to commander's critical information requirements (CCIR), and coordination for recommendations from subordinate commanders. • With commander to monitor information he receives. • With staff members and sections to assess recommendations on changes to the engineer battalion plan. 	
<p>OUTCOME 4: Sound (feasible, suitable, acceptable) decisions are made by the engineer battalion commander and others within the engineer battalion.</p>	<p>Focus is on the commander's assessment and decision making, development of the fragmentary order (FRAGO) (if needed), and the soundness of the modified plan. (Use Tables 2, 3, 5, and 8).</p> <ul style="list-style-type: none"> • With engineer battalion commander to monitor his decisions about whether to use current plan, revise plan, or initiate new plan when changes to METT-T occur. • With engineer battalion commander to monitor decision making process. • With engineer battalion commander to assess quality of decision to change the plan. • With engineer battalion commander to assess suitability, feasibility, and acceptability of decisions. 	

Outcome	Location and Focus of Assessment
<p>OUTCOME 5: Affected units and personnel receive relevant direction, changes, and refinements to plans in time to perform troop leading procedures and required preparation.</p>	<p>Focus is on the production of the FRAGO, issuing of the warning order (WARNO) and FRAGOs, and units' taking required actions. (Use Tables 4, 5, and 6).</p> <ul style="list-style-type: none"> • With engineer battalion staff to assess completeness of FRAGO. • With subordinate elements to monitor: <ul style="list-style-type: none"> -- Whether and when elements receive WARNO. -- Whether elements receive FRAGO in time to prepare. -- Whether and when elements receive subsequent FRAGOs. -- Whether directions on preparation issued in response to FRAGO are consistent with the engineer battalion commander's intent.
<p>OUTCOME 6: Subordinate leaders demonstrate an understanding of the critical elements of their own mission and mission essential tasks, the Engr Bn mission, and the Bn Cdr's intent.</p>	<p>Focus is on the demonstration of understanding through briefbacks and during rehearsals. (Use Tables 2 and 6).</p> <ul style="list-style-type: none"> • With engineer battalion commander and selected staff during unit visits to monitor briefbacks and situation reports. • At engineer battalion rehearsal to assess presence and contribution of participants vis a vis the engineer battalion commander's intent and their mission. • At subordinate unit rehearsals to assess how well the planned actions of the participants support the engineer battalion commander's intent. • With subordinate leaders to assess directions and orders they issue to their subordinates so as to verify the leaders' understanding of commander's intent. • With engineer battalion commander when FRAGO is issued to monitor briefbacks.

Outcome	Location and Focus of Assessment
<p>OUTCOME 7: Soldiers and units are disciplined and are motivated to accomplish the mission.</p>	<p>Focus is on actions by the commander and staff to promote discipline and motivation and evidence from units that indicates the level of discipline and motivation. (Use Table 7).</p> <ul style="list-style-type: none"> • With engineer battalion commander to monitor leadership techniques. • With engineer battalion staff to monitor actions in support of morale. • With subordinate units to check for visits by engineer battalion commander or staff. • With subordinate units to assess military courtesy, appearance, and condition of equipment.

ASSESSMENT SCALE

Whenever the engineer battalion's performance must be rated with respect to an outcome or component of an outcome, the rating should be on the scale Adequate, Marginal, Not Adequate, defined below. Whenever these ratings are required, the outcome (or component) will be framed in a box with the rating scale, as in this example:

OUTCOME 1: Engineer battalion CPs maintain continuous communications with higher, adjacent, and subordinate headquarters.	Adequate	Marginal	Not Adequate
--	----------	----------	--------------

In each case, circle the appropriate rating, using the scale below for guidance:

Adequate	Marginal	Not Adequate
The unit can achieve the outcome to standard. Outcome is achieved with no significant shortcomings.	The unit can achieve the outcome with some shortcomings.	The unit cannot achieve the outcome to standard.

Two sub-sections are included with each Outcome's section to assist in the selection of an appropriate rating. These sub-sections should be used if the observer requires more information upon which to base a rating or requires precision to focus planning for training:

- 1) The first sub-section consists of assessment statements which orient the observer on observable performances related to the tasks contributing to achieving the Outcome. The assessment statements were derived by incorporating the substance of several tasks.
- 2) The second sub-section entitled Diagnostic Aid lists the tasks and subtasks supporting that particular Outcome. The diagnostic aid permits selection of specific tasks to facilitate planning future training.

Where appropriate due to complexity, some Outcomes have been divided into outcome components which are assessed separately.

OUTCOME ASSESSMENT OBSERVATIONS AND DIAGNOSIS

OUTCOME 1 ASSESSMENT

OUTCOME 1: Engineer battalion CPs maintain continuous communications with higher, adjacent, and subordinate headquarters. (Use Table 1)			
	Adequate	Marginal	Not Adequate

Assessment Statements

- Engineer battalion CPs operate and monitor nets identified in Table 1.
- Engineer battalion rear CP communicates via wire with forward support battalion (FSB) CP/brigade rear CP in the brigade support area (BSA).
- CPs are positioned so that commander and staff can control preparation for battle and maintain communications.
- CPs displace, as required, to facilitate transition from preparation to the initiation of the battle.
- CPs are protected from enemy action through passive measures to reduce detection, defensive measures for early warning, perimeter protection, and a reaction force.

OUTCOME 1 DIAGNOSTIC AID

OUTCOME 1: Engineer battalion CPs maintain continuous communications with higher, adjacent, and subordinate headquarters.

Task Elements

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pamphlet (Pam) 11-9, Section IV; "Battle Command", pp. 43, 65; Army Training and Evaluation Program (ARTEP) 5-145-mission training plan (MTP), Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; field manual (FM) 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1a. Engineer battalion CPs manage means of command, control, and communications (C3).
 - 1a2 The engineer battalion XO: [FM 5-71-3, p. 2-1, and ARTEP 5-145-MTP, Task 5-1-0026/1, 5-1-0026/2, 5-1-0026/3; CALL, News from the Front]
 - a) Facilitates the flow of information and communication from engineer battalion staff members and subordinate units.
 - c) The engineer battalion XO, as the engineer battalion second in command, directs the engineer battalion main CP operations and controls engineer actions the commander cannot. [FM 5-71-3, p. 2-5]
 - 1a4 Liaison officers (LNOs) provide information to the engineer battalion commander and staff, or the maneuver brigade headquarters, or the headquarters they represent, or units they are coordinating with for the engineer battalion. [FM 5-71-3, pp. 2-5, 2-6]
 - 1a5 Engineer battalion CPs maintain communications (e.g., radio and multi-channel, wire, messenger) with subordinate units, adjacent units, supporting and higher headquarters. [FM 5-71-3, pp. 2-4 - 2-6]
 - a) The engineer Bn signal officer (SO) ensures that communications systems and links (e.g., retransmission) are operational and support the commander, staff, and subordinate leaders.
 - b) The engineer battalion XO manages communications, including positioning of command and control elements.
 - c) The engineer Bn SO controls signal operating instructions (SOI) issue and use.
 - d) The engineer Bn SO coordinates retransmission capabilities for the engineer battalion.
 - e) The engineer Bn SO directs the engineer battalion communications section's efforts on inspecting and testing communications equipment and systems.

- 1a6 Engineer battalion CPs eavesdrop on higher and adjacent unit command and operations and intelligence (O&I) nets for information as specified in the engineer battalion tactical standing operating procedure (TSOP). [FM 5-71-3, p. 2-26.]
- 1a7 Engineer battalion S3 at the TAC CP manages communications: [FM 5-71-3, pp. 2-5, 2-25]
- a) Facilitates control and coordination for the engineer battalion commander through communication with adjacent and supporting elements.
 - b) Passes processed information and keeps the engineer battalion commander updated on new information through concise, consolidated updates by eavesdropping on:
 - (1) Maneuver brigade command and O&I nets.
 - (2) Engineer battalion administrative/logistics (A/L) net.
 - (3) Adjacent unit command and O&I nets.
 - (4) Subordinate unit command nets.
 - (5) Division engineer command and O&I nets.
 - c) Operates and monitors communications nets.
 - (1) Engineer battalion command net.
 - (2) Maneuver brigade O&I net.
- 1a8 The engineer battalion headquarters and headquarters company (HHC) commander directs rear CP operations. [FM 5-71-3, p. 2-6]
- c) Operates on and monitors communications nets.
 - (1) Engineer battalion command.
 - (2) Engineer battalion A/L.
 - (3) Maneuver brigade A/L.
 - (4) Is prepared to cover the same nets as the engineer battalion main CP in the event the main CP is incapacitated.
- 1a9 The engineer battalion HHC commander directs field trains operations. [FM 5-71-3, pp. 6-2, 6-4]
- a) Maintains communications through physical liaison with the maneuver brigade rear CP and the FSB.
 - b) Operates on and monitors communications nets.
 - (1) Engineer battalion command.
 - (2) Engineer battalion A/L.

- 1b. The engineer battalion CPs maintain communications.
- 1b1 The engineer Bn SO ensures that engineer battalion communications and links are operational and support the commander, staff, and subordinate leaders. [FM 5-71-3, p. 2-3].
 - a) Monitors and reports the engineer battalion's communications equipment status.
 - b) Ensures that communications are maintained with subordinate, superior and lateral units.
 - c) Monitors communications security (COMSEC).
- 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - a) Positioning is such that the engineer battalion commander and CPs maintain communications with higher, adjacent, and subordinate units during preparation and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - (1) The engineer battalion commander exercises command and control during mission preparation.
 - (2) Engineer battalion CPs displace, as required, prior to line of departure or other mission execution time to facilitate command and control during the transition from preparation to the initiation of the battle.
 - (3) Engineer battalion staff ensures that CPs are not detected by the enemy by using passive defense measures.
 - b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (1) The engineer battalion commander positions to observe the engineer battalion as it supports the battle.
 - (2) The engineer battalion commander assesses the situation and directs changes to operations as necessary to respond to battlefield events.
 - (3) The engineer battalion commander observes and controls the main effort.
 - (a) Directs the S3 to assist him in observing and controlling main effort.
 - (b) Directs the S3 to observe and control supporting efforts.
 - (4) The engineer battalion commander reacts to events by:
 - (a) Repositioning engineer assets under engineer battalion control.
 - (b) Changing missions of companies under engineer battalion control.
 - (c) Changing priorities.
 - (d) Recommending changes to the brigade commander.
 - c) The engineer battalion main CP positions prior to mission execution to: [FM 5-71-3, p. 2-5]
 - (2) Maintain voice and digital communications with higher, adjacent, and subordinate units.
 - d) The engineer battalion rear CP positions prior to mission execution to support the engineer battalion. [FM 5-71-3, p. 2-6]
 - (1) Monitors the engineer battalion A/L net to determine subordinate unit combat service support (CSS) requirements.

- (2) Rapidly assumes the functions of the battalion main CP if required.
- e) The engineer battalion CPs take actions to survive: [ARTEP 5-145-MTP, Task 5-1-0018, subtask 1.e.]
 - (1) The CPs employ cover, concealment, and camouflage measures, and use routes which reduce detection by the enemy.
 - (2) CPs establish early warning, perimeter protection, and a reaction force.
 - (3) OPSEC is continually monitored.
- f) Communications are maintained without interruption with all subordinate elements and higher headquarters to allow the engineer battalion commander and staff to exercise command and control. [FM 5-71-3, pp. 2-23 through 2-26]
- 5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5d. The engineer battalion commander coordinates and integrates engineer support through rehearsals.
- 5d3 The engineer battalion commander coordinates and integrates the plan through battlefield operating system(s) (BOS) integration during the rehearsals. [FM 5-71-3, p. 1-5].
 - g) Engineer battalion commander integrates command and control requirements during the rehearsals. [FM 5-71-3, Chap 2]
 - (2) CPs and staff are prepared to support the mission.
 - (a) Ready to receive, process, and disseminate information.
 - (b) Move and position to support the engineer battalion commander during the battle.
 - (c) Coordinate and synchronize combat multipliers.
 - (d) Exchange information with the maneuver brigade and adjacent units.

OUTCOME 2 ASSESSMENT

OUTCOME 2: The battalion commander, staff, and other key individuals within the engineer battalion receive, evaluate, and process timely and accurate information on the adherence to timelines and quality of battle preparation.

Component A: CPs obtain accurate critical information during preparation.			
		Adequate	Not Adequate

(Use Tables 2 and 3)

Assessment Statements

- The engineer battalion commander designates and updates CCIR throughout preparation.
- All staff sections, staff officers, and LNOs (to include assistant brigade engineer (ABE)) collect/acquire information that confirms or refutes estimate of friendly status and enemy capabilities in their areas of responsibility.
- Engineer battalion CPs monitor and eavesdrop on the following nets for information:
 - Maneuver brigade command and O&I.
 - Adjacent unit command and O&I.
 - Subordinate unit command.
 - Division engineer command.
 - Division engineer O&I.
- Staff officers continually collect information from each other and external headquarters through liaison.
- Engineer battalion S3 and S3 operations section obtain information from engineer battalion or maneuver brigade subordinate units on adherence to timelines, status of survivability position production, and status of obstacle production and turnover.

Component B: Staff officers evaluate information and update products.	Adequate	Marginal	Not Adequate
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Assessment Statements

- All staff sections and staff officers (to include ABE) compare desired end states related to their areas of responsibility with the current engineer battalion situation and trends.
- Engineer battalion CPs update operations products, administrative and logistics products, intelligence products, and decision support aids.
- Engineer battalion S3 updates the engineer commander as brigade engineer on changes impacting on the scheme of engineer operations for the brigade.

Component C: Commander and staff monitor adherence to timelines and quality of battle preparation.	Adequate	Marginal	Not Adequate
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- The engineer battalion commander visits at least those units that are most critical to the execution of his intent and designates staff and command sergeant major (CSM) to visit other units.
- The engineer battalion commander, staff officers, and CSM assess units' preparations during visits and inspections.
- Engineer battalion main CP monitors status of preparation:
 - Current and projected engineer equipment status of subordinate units.
 - Obstacle and survivability position construction and progress as compared to timelines.
 - Utilization of engineer assets and materials as compared to timelines.

- Engineer rear CP monitors status of personnel and equipment:
 - Current and projected personnel strength.
 - Current and projected equipment strength.
 - Location and evacuation of enemy prisoner(s) of war (EPW) and their equipment.
 - Location and availability of civilian equipment and materials.

OUTCOME 2 DIAGNOSTIC AID

OUTCOME 2: The battalion commander, staff, and other key individuals within the engineer battalion receive, evaluate, and process timely and accurate information on the adherence to timelines and quality of battle preparation.

Task Elements

Component A: CPs obtain accurate critical information during preparation.

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1a. Engineer battalion CPs manage means of C3.
 - 1a1 The engineer battalion commander modifies/updates CCIR based on the current situation: [ARTEP 5-145-MTP, Task 5-1-0002]
 - a) Planned progress of preparatory tasks (e.g., changes in engineer equipment, survivability position construction, obstacle construction).
 - b) Changes to METT-T (e.g., new guidance or missions from the supported maneuver brigade) which cause the engineer battalion commander to modify his CCIR.
 - c) Engineer battalion commander's visualization of current preparations progress and desired endstate.
 - 1a2 The engineer battalion XO: [FM 5-71-3, p. 2-1, and ARTEP 5-145-MTP, Task 5-1-0026/1, 5-1-0026/2, 5-1-0026/3; CALL, News from the Front]
 - a) Facilitates the flow of information and communication from engineer battalion staff members and subordinate units.
 - b) Outlines and monitors the performance and responsibilities of the staff in processing mission information, preparation status, and the commander's information requirements.
 - 1a3 The engineer battalion commander or XO selects a "battle captain" (in accordance with the TSOP) who manages the main CP and the operations section when the XO or S3 is not available. [lessons learned (LL)-combat training center (CTC) Bulletin 95-4, Chap 1; CTC Bulletin 94-1, p. 5]

- a) Coordinates and integrates engineer battalion staff activities.
 - b) Initiates staff action as directed by the engineer battalion commander, XO, or S3.
 - c) Provides recommendations to engineer battalion commander, XO, or S3 on current situations and status of unit preparations.
- 1a4 LNOs provide information to the engineer battalion commander and staff, or the maneuver brigade headquarters, or the headquarters they represent, or units they are coordinating with for the engineer battalion. [FM 5-71-3, pp. 2-5, 2-6]
- 1a7 Engineer battalion S3 at the TAC CP manages communications: [FM 5-71-3, pp. 2-5, 2-25]
- b) Passes processed information and keeps the engineer battalion commander updated on new information through concise, consolidated updates.
- 1b. The engineer battalion CPs maintain communications.
- 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
- b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (1) The engineer battalion commander positions to observe the engineer battalion as it supports the battle.
 - (2) The engineer battalion commander assesses the situation and directs changes to operations as necessary to respond to battlefield events.
 - (3) The engineer battalion commander observes and controls the main effort.
 - (a) Directs the S3 to assist him in observing and controlling main effort.
 - (b) Directs the S3 to observe and control supporting efforts.
 - c) The engineer battalion main CP positions prior to mission execution to: [FM 5-71-3, p. 2-5]
 - (1) Collect, analyze, and pass critical information.
 - (3) Receive and disseminate situation updates during transition from the preparation phase to mission execution.
 - d) The engineer battalion rear CP positions prior to mission execution to support the engineer battalion. [FM 5-71-3, p. 2-6]
 - (1) Monitors the engineer battalion A/L net to determine subordinate unit CSS requirements.
2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]

- 2a. The engineer battalion commander and staff acquire information.
- 2a1 The engineer battalion commander, using techniques such as standardized net calls, schedules and conducts a coordination session with key staff members and subordinate leaders prior to mission execution to collect information. [FM 5-71-3, p. 2-23]
- a) Latest intelligence on the enemy, and standard and non-standard terrain products are disseminated by the engineer battalion S2.
 - c) Engineer battalion staff officers and subordinate leaders perform final coordination.
 - e) The session is timed to ensure that final coordination and plan modifications occur in a timely manner (e.g., adjustments to maneuver brigade planned situational obstacle locations for Volcano can be passed to the appropriate assault and obstacle platoon leader).
- 2a2 The engineer battalion commander obtains information relative to engineer battalion preparations. [FM 5-71-3, p. 2-23]
- 2a3 Engineer battalion subordinate leaders and staff officers collect and report CCIR according to their area of responsibility. [ARTEP 5-145-MTP, Tasks 5-1-0026, 5-1-0413]
- 2a4 The engineer battalion XO obtains information relative to engineer battalion preparations. [FM 5-71-3, pp. 2-1, 2-2]
- 2a5 The engineer battalion CSM obtains information relative to the state of engineer battalion preparations. [FM 5-71-3, p. 2-2]
- 2a6 The engineer battalion S2 receives significant changes to the intelligence preparation of the battlefield (IPB). [FM 5-71-3, p. 2-2]
- a) Receives information from division engineer, maneuver brigade, and engineer battalion staff:
 - (1) TerraBase updates from division engineer.
 - (2) Intelligence summaries and spot reports from maneuver brigade and higher headquarters.
 - (3) Information from maneuver brigade and adjacent units based on previously submitted information queries.
 - (4) Operations security (OPSEC) reports from the engineer battalion S3 and operations section and subordinate units which contribute to analysis of engineer battalion security posture.
 - (5) Updates from the maneuver brigade S2 on enemy activity based on reports from the divisional military intelligence battalion.

- (6) Information on current situation learned by eavesdropping on maneuver brigade and adjacent unit command and O&I nets.
- b) Receives information from subordinate units:
 - (1) Information resulting from debriefing patrols and other reconnaissance and surveillance (R&S) forces performing engineer battalion directed information collection activities, such as gathering obstacle intelligence (OBSTINTEL).
 - (2) Size, activity, location, unit, time, and equipment spot reports from engineer battalion elements.
 - (3) Reports from R&S elements provided by maneuver brigade.
- c) Receives IPB information from engineer battalion or maneuver brigade special staff officers and LNOs acquired through coordination with their counter-parts in higher, adjacent, and "parent" units and passed to the engineer battalion S2.
- d) Receives information through division engineer, maneuver brigade, or from other sources; e.g.,:
 - (1) Aerial photographs.
 - (2) Prisoners, deserters, and civilian population.
 - (3) Electronic warfare (EW), radars, and sensors.

2a7

Engineer battalion S3, and S3 operations section obtain information from engineer battalion or maneuver brigade subordinate units which may affect operations. [FM 5-71-3, pp. 2-2, 2-3, 2-5, 2-6]

- a) Preparation status of engineer battalion subordinate units.
 - (1) Adherence to timelines.
 - (2) Status of survivability position construction.
 - (3) Status of obstacle production and turnover.
 - (4) Equipment status.
 - (5) Other preparations.
- b) Changes to engineer company or maneuver Bn task force (TF) plans.
- c) Reports from maneuver brigade subordinate units (e.g., Bn TFs, R&S forces, security elements, other subordinate units):
 - (1) Enemy contact:
 - (a) Ground.
 - (b) Fires.
 - (c) Other.
 - (2) Current strength and combat power.
 - (3) Status of preparation activities and other tasks as outlined in mission timelines for:
 - (a) Maneuver brigade security forces.
 - (b) Engineer companies.

- (4) Status of task organization.
- (5) OPSEC reports.
 - (a) Signal security reports (e.g., loss of SOI, graphics).
 - (b) Meaconing, interference, jamming, intrusion (MLJI) reports.
- (6) Results of local security operations.
 - (a) Security patrols.
 - (b) Listening posts/observation posts.
- (7) Obstacle overlays, minefield reports, sector sketches, and other products as directed by engineer battalion TSOP and the engineer battalion commander.
- d) Requests for resources from engineer battalion subordinate units based on their mission analyses and determination of their needs to accomplish their assigned tasks.
- e) Recommendations from engineer battalion subordinate commanders on changes to the plan based on their mission analyses, current status, and projected status.
- f) Information by eavesdropping on: [FM 5-71-3, p. 2-26]
 - (1) Maneuver brigade units' command nets, such as:
 - (a) Orders from maneuver brigade commander to other commanders.
 - (b) Situation reports by maneuver Bn TF commanders or other maneuver brigade assets to maneuver brigade CPs.
 - (2) Maneuver Bn TF's command nets.

4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]

4b. The engineer battalion commander conducts the military decision-making process (MDMP) in a time-constrained environment, with or without staff assistance. [FM 5-71-3, p. 2-15]

4b2 The engineer battalion commander and staff simultaneously monitor, plan, and direct all aspects of engineer battalion operations (e.g., preparations for the current mission, changes to the current plan, and the next mission being formulated).

4b6 The engineer battalion commander may request information from the staff in developing the new scheme of engineer operations (SOEO). [ARTEP 5-145-MTP, Task 5-1-0002]

- a) Uses new maneuver brigade course of action (COA) to develop the SOEO.

- b) Uses products and analyses developed during the initial mission MDMP to define branches and sequels for consideration.
 - c) Provides recommendations to modify existing branches and sequels to meet new requirements.
 - d) Provides recommendations on developing new branches and sequels based on new requirements.
 - e) The commander may request information from the staff to support his COA development.
 - (1) BOS specific information from selected staff members.
 - (2) Information available in products developed during the initial mission MDMP.
 - f) The engineer battalion staff assists the engineer battalion commander in his analysis of the plan by providing information. [ARTEP 5-145- MTP, Task 5-1-0002, subtask 2]
 - (1) Reviews updated estimates and provides information based on queries.
 - (2) Provides input on previous COAs which could be used as the new plan without detailed COA development.
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5f. The ABE participates in the maneuver brigade rehearsals. [FM 5-71-3, p. 2-2]
 - 5f2 Records decisions and changes to the brigade plan.
 - 5f3 Provides relevant information to the engineer battalion CPs.
 - 5g. The engineer battalion commander, as maneuver brigade engineer, attends maneuver Bn TF rehearsals whose assigned missions include critical aspects of mobility-survivability (M/S) BOS. [field note (FN) - NTC Engr observer-controllers (OCs)]
 - 5g1 Reviews adequacy of TF engineer plans for supporting the maneuver TF scheme of maneuver.

Component B: Staff officers evaluate information and update products.

1. **Engineer battalion command posts manage and maintain command, control and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]

- 1b. The engineer battalion CPs maintain communications.
 - c) The engineer battalion main CP positions prior to mission execution to: [FM 5-71-3, p. 2-5]
 - (1) Collect, analyze, and pass critical information.
 - (3) Receive and disseminate situation updates during transition from the preparation phase to mission execution.

2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and, maintain status.**
 [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 2a. The engineer battalion commander and staff acquire information.

 - 2a1 The engineer battalion commander, using techniques such as standardized net calls, schedules and conducts a coordination session with key staff members and subordinate leaders prior to mission execution to collect information. [FM 5-71-3, p. 2-23]
 - b) Modifications to the plan are reviewed to verify understanding.
 - d) Problems are identified and corrected.
 - e) The session is timed to ensure that final coordination and plan modifications occur in a timely manner (e.g., adjustments to maneuver brigade planned situational obstacle locations for Volcano can be passed to the appropriate assault and obstacle platoon leader).
 - f) Engineer battalion commander and staff continuously conduct assessment of risks to mission success and hazards for engineer operations.

 - 2b. The engineer battalion commander and staff evaluate required information and update products.

 - 2b1 The engineer battalion commander evaluates information and reports received from: [FM 5-71-3, p. 1-8]
 - a) Engineer companies.
 - b) Other subordinates.
 - c) Engineer battalion staff.
 - d) The maneuver brigade or division engineer.
 - e) The ABE.

 - 2b2 The engineer battalion XO at the main CP evaluates information and reports received from: [FM 5-71-3, pp. 2-1, 2-2, 2-5]
 - a) The rear CP.

- b) The TAC CP.
 - c) Engineer battalion subordinate units.
 - d) The supported maneuver brigade or division engineer.
 - e) Adjacent units.
 - f) Other staff officers.
- 2b3 The engineer battalion CSM evaluates information and reports received from: [FM 5-71-3, p. 2-2]
- a) Personal observations made during visits and inspections of subordinate unit preparatory activities.
 - b) Reports from other noncommissioned officers in units subordinate to the engineer battalion.
- 2b4 The engineer battalion S2.
- a) Engineer battalion S2 evaluates intelligence information. [FM 5-71-3, pp. 2-15 through 2-16]
 - (1) Changes to guidance/direction and information related to intelligence collection.
 - (2) Information which confirms or refutes IPB information which may affect achieving the commander's intent:
 - (a) Information requirements (IR)/priority intelligence requirements (PIR).
 - (b) Named areas of interest (NAIs) and targeted areas of interest (TAIs).
 - (3) Indications that R&S plan or operations will or will not continue to meet engineer battalion and maneuver brigade commanders' intents.
 - (a) Positioning of assets to collect PIR and IR.
 - (b) Positioning of assets to maintain constant observation of NAIs.
 - b) Engineer battalion S2 tracks status of engineer reconnaissance teams, requests for standard and non-standard topographic products, and information requests. [FN-NTC ENGR OC] [AN]
 - c) Engineer battalion S2 maintains IPB. [FM 5-71-3, p. 2-2]
 - (1) Briefs patrol leaders and other R&S forces on collection tasks, primarily related to OBSTINTEL and other engineer information. [FM 90-13-1, p. 2-2]
 - (2) Location (confirmed and suspected) of enemy obstacles, to include:
 - (a) Composition.
 - (b) Orientation.
 - (c) Marking.
 - (d) Fusing.
 - (3) Enemy activity.
 - (a) Indications of possible intent.

- (b) Enemy reactions to friendly battle techniques.
- (c) Specific enemy actions triggered by friendly actions or events.
- (4) Adherence to, or deviation from, postulated enemy COA.
- d) The engineer battalion S2 updates products. [FM 5-71-3, p. 2-2]
 - (1) The situation template.
 - (2) The event template.
 - (3) The engineer battlefield assessment (EBA).
- 2b5 The engineer battalion S3 and operations section.
 - a) Engineer battalion S3 and operations section evaluate information. [FM 5-71-3, pp. 2-8 through 2-13]
 - (1) Operations orders (OPORDs) from engineer battalion subordinate units to ensure synchronization with maneuver brigade and engineer battalion OPORD.
 - (2) Information which confirms or refutes IPB information which may affect achieving the commander's intent.
 - (3) Changes to the engineer battalion commander's guidance/direction and information concerning priorities and timelines.
 - (4) Desired engineer battalion endstates compared with what is possible based on the current SOEO situation and trends.
 - (a) Maneuver units.
 - (b) Fire support units.
 - (c) Engineer units.
 - (d) CSS units.
 - (5) Changes to the maneuver brigade maneuver plan for impact on maneuver brigade subordinate units' maneuver plans.
 - (6) Engineer battalion OPSEC information received from maneuver brigade sources and internal engineer battalion sources.
 - (7) Information learned from the main effort TF's OPORD briefing. [author note (AN)]
 - (8) Backbriefs from TFs' engineers. [AN]
 - b) The engineer battalion S3 and operations section update products. [FM 5-71-3, pp. 2-2, 2-3; LL - CALL Newsletter No. 88-3]
 - (1) Operations overlay. (Consolidated brigade and TFs.)
 - (2) Obstacle overlay.
 - (3) Decision support template.

- (4) Engineer execution matrix.
- 2b6 The engineer battalion nuclear, biological, and chemical (NBC) non-commissioned officer (NCO).
- a) The engineer battalion NBC NCO evaluates information. [FM 5-71-3, pp. 2-3 and 2-4]
 - (1) Chemical downwind messages.
 - (2) NBC 1 reports.
 - (3) NBC 2 reports.
 - (4) NBC 4 reports.
 - (5) NBC 5 reports.
 - (6) NBC 6 reports.
 - (7) Information from the engineer battalion S2 pertaining to enemy NBC capabilities.
 - b) Engineer battalion NBC NCO updates NBC products. [FM 5-71-3, pp. 2-3 through 2-4]
 - (1) Updates NBC estimate (may or may not be in written form) and mission oriented protective posture (MOPP) analysis.
 - (2) Enemy NBC capabilities.
 - (3) NBC equipment and supplies inventories.
 - (4) NBC overlays and graphics.
 - c) Engineer battalion NBC NCO tracks and develops activities against his chemical defense analysis. [FN-NTC Engr OC]
- 2b7 The engineer Bn SO and communications section.
- a) The engineer Bn SO and communications section evaluate information. [FM 5-71-3, p. 2-3]
 - (1) MJJI reports.
 - (2) Communications equipment status reports.
 - (3) COMSEC reports.
 - b) Engineer Bn SO updates communications products. [FM 5-71-3, p. 2-3]
 - (1) Updates signal estimates (may or may not be in written form).
 - (2) Communications network overlay, area coverage overlay, and dead space overlay.
 - (3) SOIs and secure equipment keying device codes.
- 2b8 Engineer battalion CSS officers.
- a) All CSS officers evaluate information. [FM 5-71-3, Chap 6]
 - (1) Current personnel and medical status.

- (2) Current maintenance, transportation, and supply status.
 - (3) Information which confirms or refutes IPB information which may affect achieving the commander's intent.
 - (4) Answers to intelligence queries requested by CSS officers which could affect initial CSS plan.
 - (5) Impact of adjusted plans from subordinate units on engineer battalion CSS plans.
- Engineer battalion CSS officers update products.
- (1) Engineer battalion S4 and HHC commander update transportation information and status. [FM 5-71-3, pp. 6-2 to 6-3].
 - (a) Updated transportation estimates (may or may not be in written form).
 - (b) Schedules and priorities.
 - (c) Status of supplies, equipment, and materials requiring transport.
 - (d) Availability of ground transport assets.
 - (e) Availability of air transportation assets (from engineer battalion S3).
 - (f) Logistical package convoys organization, loads, times, and schedules.
 - (g) Transportation recovery plan and back-haul plan.
 - (h) Main supply route (MSR) and alternate supply route (ASR) traffic and route conditions.
 - (i) Transportation priorities are directed by the engineer battalion commander.
 - (2) Engineer battalion S4 updates supply information and status. [FM 5-71-3, Chap 6]
 - (a) Updates the supply estimate (may or may not be in written form).
 - (b) Combat basic loads (e.g., vehicles uploaded with class (CL) V; vehicles topped off with CL III, and on-hand supply status of subordinate and supported units).
 - (c) Configuration and location of immediate and emergency resupply (CL III, IV and V) loads and push packages.
 - (d) Supply priorities as directed by the engineer battalion commander.
 - (e) Establishment and fill of stockpiles and caches.
 - (3) Engineer battalion S1 updates personnel information. [FM 5-71-3, Chap 6]
 - (a) Updates the personnel estimate (may or may not be in written form).
 - (b) Personnel status of subordinate and supported units.
 - (c) Casualty feeder reports.
 - (d) Reception and processing of replacements.
 - (e) Forecast of replacements.
 - (f) Personnel actions (awards, decorations, promotions, legal action).
 - (g) EPW processing and evacuation.

- (4)
 - (h) Soldier morale and welfare activities.
 - (i) Personnel priorities are directed by the engineer battalion commander.

The engineer battalion maintenance technician (BMT) updates maintenance information. [FM 5-71-3, Chap 6]

 - (a) Updates the maintenance estimate (may or may not be in written form).
 - (b) Number and type of systems on hand and operational.
 - 1 Combat.
 - 2 Combat support (CS).
 - 3 CSS.
 - (c) Systems non-mission capable (NMC) and repairable.
 - (d) Timelines for repair and return of vehicles and equipment.
 - (e) On hand CL IX, authorized stockage list (ASL), and prescribed load list (PLL) stockage levels.
 - (f) Maintenance activities performed by company maintenance teams and maintenance support teams, including the location of the maintenance activities.
 - (g) Maintenance priorities and guidelines as directed by the engineer battalion commander.
- (5) Engineer battalion medical section leader updates medical information. [FM 5-71-3, pp. 6-13 and 6-14]
 - (a) Updates the medical estimate (may or may not be in written form).
 - (b) Casualty evacuation records.
 - (c) CL VIII stock availability and resupply actions.
 - (d) Augmentation by FSB medical assets.
 - (e) Disposition and capability of treatment and evacuation support in the form of maneuver battalions' TF forward aid stations, main aid stations, medical teams attached to subordinate units, and medical/ambulance support from the FSB medical company.
 - (f) Medical priorities as directed by the engineer battalion commander.
 - (g) Subunits' casualty evacuation plans.
- (6) Engineer battalion S4 and HHC commander update RACO information. [ARTEP 5-145-MTP, Task 5-1-0039]
 - (a) Updated rear area combat operations (RACO) estimates.
 - (b) Threat (levels I, II, and III) from engineer battalion S2.
 - (c) Base and base cluster defense plans integrated with FSB and maneuver brigade defense plans.
 - 1 Forces available for local security operations and reaction force.
 - 2 Indirect fire support.
 - 3 Communications capabilities.

- 2c. Engineer battalion CPs maintain information and engineer status; update mission essential products.
- 2c1 Engineer battalion command group/TAC CP maintains and updates mission essential products: [FM 5-71-3, p. 2-5]
- a) Information which supports the engineer battalion CCIR.
 - b) Current and projected engineer equipment status of subordinate units (e.g., green-amber-red).
 - c) O&I map.
 - (1) Operations overlay (maneuver brigade, engineer battalion subordinate units, and adjacent units).
 - (2) Fire support overlay.
 - (3) Situation template overlay.
 - (4) Event template overlay
 - (5) Modified combined obstacle overlay (MCOO).
 - (6) Obstacle graphics.
 - d) DST.
 - e) Synchronization matrix.
 - f) Engineer execution matrix.
- 2c2 Main CP maintains and updates mission essential information: [FM 5-71-3, p. 2-5]
- a) O&I map.
 - (1) Operations overlay (maneuver brigade, Bn TFs, and adjacent units).
 - (2) Fire support overlay.
 - (3) Situation template overlay.
 - (4) Event template.
 - (5) MCOO.
 - (6) NBC overlay.
 - (7) CSS overlay.
 - (8) Obstacle graphics.
 - b) CSS overlays and information per engineer battalion TSOP.
 - c) Intelligence information from maneuver brigade and higher headquarters.
 - d) Status of preparation activities to ensure compliance with stated mission timelines.
 - e) Current and projected engineer equipment status of subordinate units (e.g., green-amber-red).
 - f) Status of engineer task organization.
 - g) Obstacle and survivability position construction and progress as compared to timelines.

Utilization of engineer assets and materials as compared to timelines.

- h)
- i)
- j)
- k)
- l)
- m)

DST.

Engineer execution matrix.

Plans map (with overlays for future operations).

Synchronization matrix.

Journals/logs:

(1) Operations.

(2) Intelligence.

2c3 Engineer battalion rear CP maintains and updates mission-essential information and products: [FM 5-71-3, p. 2-6]

a) Current O&I map.

(1) Operations overlay (maneuver brigade, maneuver Bn TFs, and adjacent maneuver brigades' flank units).

(2) Rear operations, security, and threat overlay.

(3) Fire support overlay.

(4) Situation template overlay.

(5) Event template overlay.

(6) MCOO.

(7) Obstacle graphics.

b) DST.

c) Engineer execution matrix.

d) CSS situation map and overlays.

(1) MSR and ASR.

(2) CSS locations, current and projected.

(3) Decontamination sites.

Synchronization matrix (applicable to employment as an engineer Bn TF).

e) CSS staff journal.

f) Current and projected personnel and equipment status.

g) Personnel strength.

(1) Operational equipment strength.

(2) Status of supplies.

(3) Replacement personnel status/location.

(4) Damaged and NMC vehicles and equipment.

(5)

- (a) Recovery status.
- (b) Repair status.
- (c) Replacement status.
- h) Status on location and evacuation of EPW and their equipment.
- i) Status on location and evacuation of displaced civilians.
- j) Status on location and availability of civilian equipment and materials.

Component C: Commander and staff monitor adherence to timelines and quality of battle preparation.

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1a. The engineer battalion commander performs visits and inspections.
 - 1a1 Engineer battalion commander provides command presence by exercising three key elements of battle command while conducting visits and inspection. [FM 5-71-3, p. 1-8]
 - b) Information assimilation: The commander learns the situation and state of mission preparation throughout the engineer battalion's units and functions.
 - 1b. The engineer battalion CPs maintain communications.
 - 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - c) The engineer battalion main CP positions prior to mission execution to: [FM 5-71-3, p. 2-5]
 - (1) Collect, analyze, and pass critical information.
 - (3) Receive and disseminate situation updates during transition from the preparation phase to mission execution.
2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and, maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 2a. The engineer battalion commander and staff acquire information.

- 2a2 The engineer battalion commander obtains information relative to engineer battalion preparations. [FM 5-71-3, p. 2-23]
- 2a4 The engineer battalion XO obtains information relative to engineer battalion preparations. [FM 5-71-3, pp. 2-1, 2-2]
- 2a5 The engineer battalion CSM obtains information relative to the state of engineer battalion preparations. [FM 5-71-3, p. 2-2]
- 2a7 Engineer battalion S3, and S3 operations section obtain information from engineer battalion or maneuver brigade subordinate units which may affect operations. [FM 5-71-3, pp. 2-2, 2-3, 2-5, 2-6]
 - a) Preparation status of engineer battalion subordinate units.
 - (1) Adherence to timelines.
 - (2) Status of survivability position construction.
 - (3) Status of obstacle production and turnover.
 - (4) Equipment status.
 - (5) Other preparations.
 - c) Reports from maneuver brigade subordinate units (e.g., Bn TFs, R&S forces, security elements, other subordinate units):
 - (3) Status of preparation activities and other tasks as outlined in mission timelines for:
 - (a) Maneuver brigade security forces.
 - (b) Engineer companies.
 - (4) Status of task organization.
 - e) Recommendations from engineer battalion subordinate commanders on changes to the plan based on their mission analyses, current status, and projected status.
- 2c. Engineer battalion CPs maintain information and engineer status; update mission essential products.
- 2c1 Engineer battalion command group/TAC CP maintains and updates mission essential products: [FM 5-71-3, p. 2-5]
 - d) DST.
 - e) Synchronization matrix.
 - f) Engineer execution matrix.
- 2c2 Main CP maintains and updates mission essential information: [FM 5-71-3, p. 2-5]
 - d) Status of preparation activities to ensure compliance with stated mission timelines.

- f) Status of engineer task organization.
 - g) Obstacle and survivability position construction and progress as compared to timelines.
 - h) Utilization of engineer assets and materials as compared to timelines.
 - i) DST.
 - j) Engineer execution matrix.
 - l) Synchronization matrix.
- 2c3 Engineer battalion rear CP maintains and updates mission-essential information and products: [FM 5-71-3, p. 2-6]
- b) DST.
 - c) Engineer execution matrix.
 - e) Synchronization matrix (applicable to employment as an engineer Bn TF).
4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]
- 4b. The engineer battalion commander conducts the MDMP in a time-constrained environment, with or without staff assistance.
[FM 5-71-3, p. 2-15]
- 4b3 The engineer battalion commander and staff maintain the pace of engineer battalion preparations to be ready by the designated time, make changes in a timely manner, and, if appropriate, plan for a future mission.
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5a. The engineer battalion commander performs visits and inspections.
- 5a2 Inspections and visits are scheduled. [FM 5-71-3, p. 2-23]
- a) Inspections and visits do not significantly interfere with, delay, or artificially sequence subordinate units' combat preparations.
 - b) The commander determines and outlines those items and activities he will inspect based on:
 - (1) Experience.
 - (2) In-depth knowledge of the engineer battalion and its equipment.

- (3) Assessment of the current status of the units (each company, platoon, special platoon, attachments).
 - (4) Significant points and areas such as:
 - (a) Main effort.
 - (b) Key positions.
 - (c) Breach force.
 - (d) Obstacle construction.
 - (5) Items which serve as indicators of maintenance, readiness, or morale trends within the unit (subordinate leader graphics, battle fatigue).
- 5a3) The engineer battalion commander assesses the state of mission preparedness through inspections and visits. [FM 5-71-3, p. 2-23]
- a) Questions subordinate leaders down to platoon leaders and mission critical equipment operators and compares their concepts of the operation with his to ensure that the engineer battalion plan is synchronized at all levels.
 - b) Concentrates on those units and officers that demonstrate leadership weaknesses; checks, listens, and observes to be sure tasks are understood.
 - c) Inspects and spot-checks previously identified weaknesses to ensure that they have been corrected.
 - d) Makes a subjective assessment of cohesion, morale, and esprit and implements corrective actions when needed.
 - h) Manages his time and prioritizes his visits to visit at least those units most critical to the execution of his intent; e.g.,:
 - (1) The engineer supporting the maneuver brigade main effort.
 - (2) The unit or activity he will be with during the battle.

5a4 The engineer battalion commander extends his command presence by directing members of his staff to perform inspections and visits (XO, CSM, or one or more engineer battalion staff members), and to inform him of refinements and adjustments to engineer battalion preparation activities that they have directed as well as problems that they have observed. [FM 5-71-3, pp. 2-1 through 2-4]

5b. The engineer battalion commander exercises leadership and maintains unit cohesion and discipline.

5b5 The commander monitors subordinates and self for degradation of mental and physical capability.

- a) Commander appraises own physical and mental state and rests.
- b) Battalion XO monitors the commander's and staff members' physical and mental state and recommends rest periods.

- 5g. The engineer battalion commander, as maneuver brigade engineer, attends maneuver Bn TF rehearsals whose assigned missions include critical aspects of M/S BOS. [FN - NTC Engr OCs]
- 5g1 Reviews adequacy of TF engineer plans for supporting the maneuver TF scheme of maneuver.
- 5g2 Assesses maneuver TF employment of engineer support.

OUTCOME 3 ASSESSMENT

OUTCOME 3: Tactically sound recommendations are developed and critical information is communicated by the battalion staff and subordinate leaders. (Use Tables 2, 3, 5, and 8)

Component A: Staff and subordinate leaders provide critical information.	Adequate	Marginal	Not Adequate
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Assessment Statements

- The engineer battalion commander, in his capacity as brigade engineer, provides critical mobility, countermobility, and survivability information to the maneuver brigade commander.
- Engineer battalion staff officers, LNOs, and subordinate leaders (to include the ABE) immediately communicate any response to CCIR to the engineer battalion commander, XO, and S3.
- All engineer battalion staff officers and LNOs (to include ABE) pass critical information to staff officers and LNOs who require the information as soon as the information is received.
- The engineer battalion XO manages information flow and establishes a system to keep the engineer battalion commander informed.
- The engineer battalion S2 keeps the engineer battalion commander updated with accurate information on enemy situation and capabilities and on changes to terrain conditions.
- The engineer battalion commander conducts a coordination session with key staff members prior to mission execution to collect information.

Component B: Staff and subordinate commanders provide tactically sound recommendations.	Adequate	Marginal	Not Adequate
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Assessment Statements

- The engineer battalion commander, in his capacity as brigade engineer, provides tactically sound recommendations to the maneuver brigade commander.
- Engineer battalion staff officers and LNOs (to include the ABE) provide appropriate recommendations to the commander relative to their functional areas.
- Engineer battalion staff officers and LNOs (to include ABE) provide appropriate recommendations to each other and to other appropriate units.
- Engineer battalion staff officers obtain recommendations from subordinate leaders on changes to the engineer battalion plan based on their current and projected status.

OUTCOME 3 DIAGNOSTIC AID

OUTCOME 3: Tactically sound recommendations are developed and critical information is communicated by the battalion staff and subordinate leaders.

Task Elements

Component A: Staff and subordinate leaders provide critical information.

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1a. Engineer battalion CPs manage means of C3.
 - 1a1 The engineer battalion commander modifies/updates CCIR based on the current situation: [ARTEP 5-145-MTP, Task 5-1-0002]
 - a) Planned progress of preparatory tasks (e.g., changes in engineer equipment, survivability position construction, obstacle construction).
 - b) Changes to METT-T (e.g., new guidance or missions from the supported maneuver brigade) which cause the engineer battalion commander to modify his CCIR.
 - c) Engineer battalion commander's visualization of current preparations progress and desired endstate.
 - 1a2 The engineer battalion XO: [FM 5-71-3, p. 2-1, and ARTEP 5-145-MTP, Task 5-1-0026/1, 5-1-0026/2, 5-1-0026/3; CALL, News from the Front]
 - a) Facilitates the flow of information and communication from engineer battalion staff members and subordinate units.
 - 1a4 LNOs provide information to the engineer battalion commander and staff, or the maneuver brigade headquarters, or the headquarters they represent, or units they are coordinating with for the engineer battalion. [FM 5-71-3, pp. 2-5, 2-6]
 - a) Responses to specific questions asked of LNOs.
 - b) Unit locations, activities, capabilities, status, and intentions.
 - c) Receipt of mission change or new guidance by the supported headquarters.

- d) Coordination problems.
 - (1) Inability to reach/meet with specific people or staff positions.
 - (2) Receipt of information which invalidates or changes estimates and plans.
- 1a7 Engineer battalion S3 at the TAC CP manages communications: [FM 5-71-3, pp. 2-5, 2-25]
- b) Passes processed information and keeps the engineer battalion commander updated on new information through concise, consolidated updates.
2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and, maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
- 2a. The engineer battalion commander and staff acquire information.
- 2a1 The engineer battalion commander, using techniques such as standardized net calls, schedules and conducts a coordination session with key staff members and subordinate leaders prior to mission execution to collect information. [FM 5-71-3, p. 2-23]
- a) Latest intelligence on the enemy, and standard and non-standard terrain products are disseminated by the engineer battalion S2.
 - c) Engineer battalion staff officers and subordinate leaders perform final coordination.
 - e) The session is timed to ensure that final coordination and plan modifications occur in a timely manner (e.g., adjustments to maneuver brigade planned situational obstacle locations for Volcano can be passed to the appropriate assault and obstacle platoon leader).
- 2a3 Engineer battalion subordinate leaders and staff officers collect and report CCIR according to their area of responsibility. [ARTEP 5-145-MTP, Tasks 5-1-0026, 5-1-0413]
- 2d. The engineer battalion commander and staff communicate information.
- 2d1 The engineer battalion commander communicates information. [FM 5-71-3, p. 2-1]
- a) Changes to his intent to subordinate commanders and staff.
 - b) Changes to the SOEO to the maneuver brigade commander and staff.
 - c) Changes in subordinate units' status noted during inspections and visits to affected staff.

- 2d2 All engineer battalion staff officers disseminate information. [FM 5-71-3, pp. 2-1 through 2-6]
- a) Provide briefings to the commander on the status of mission preparedness.
 - b) Each staff representative communicates critical information needed to:
 - (1) Coordinate engineer battalion actions and plans.
 - (2) Monitor the situation.
 - (3) Direct engineer battalion actions.
 - c) All engineer battalion staff officers remain alert for and ensure that critical information they receive is passed to other staff officers who require the information as soon as it is received.
 - d) Information is communicated between engineer battalion staff officers during shift change briefings on the situation: [FM 5-71-3, pp. B-1 through B-5; LL - CALL, News from the Front]
 - (1) Enemy activities.
 - (2) Status of subordinate units.
 - (3) Timelines and suspenses which must be met.
 - (4) Planning for future missions.
 - (5) Ongoing actions.
- 2d3 The engineer battalion S2 communicates information.
- a) Engineer battalion S2 immediately reports PIR and other critical information concerning ongoing and future missions along with analysis to: [FM 5-71-3, p. 2-2]
 - (1) Maneuver brigade commander.
 - (2) Maneuver brigade S3.
 - (3) Engineer battalion commander.
 - (4) Engineer battalion S3.
 - (5) Engineer battalion XO.
 - (6) Companies under engineer battalion control.
 - (7) Engineer battalion rear CP.
 - (8) Division engineer.
 - (9) ABE.
 - b) Engineer battalion S2 disseminates: [FM 5-71-3, p. 2-2]
 - (1) Revised products.
 - (a) EBA.
 - (b) Event template.

- (c) Situation template.
- (d) Standard and non-standard topographic products.
- (2) PIR and other critical information.

2d4 The engineer battalion S3 and operations section communicate information.

- a) Engineer battalion S3 and operations section report and disseminate CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [ARTEP 5-145-MTP, Task 5-1-0026/1f; FM 5-71-3, p. 2-15]

- (1) Engineer battalion commander.
- (2) Engineer battalion XO.
- (3) Engineer companies and other subordinate units.
- (4) Engineer battalion rear CP.
- (5) Maneuver brigade main CP.
- (6) ABE.
- b) The engineer battalion S3 and operations section report CCIR and other critical information concerning the ongoing and future engineer missions along with recommendations to: [FM 5-71-3, pp. 2-8 through 2-15]
 - (1) Maneuver brigade commander.
 - (2) ABE.
 - (3) Division engineer brigade commander.
 - (4) Assistant division engineer.
 - (5) Maneuver brigade subordinate commanders and leaders.
 - (6) Maneuver brigade staff officers who need the information.
- c) Engineer battalion S3 coordinates with other units to exchange information concerning engineer operations. [FM 5-71-3, p. 2-3, ARTEP 5-145-MTP, Task 5-1-0026/6]
 - (1) Obstacle status, intent, type, and location.
 - (2) Mobility plans (maneuver brigade, division, and other maneuver brigades).
 - (3) Terrain management issues with the maneuver brigade S3 to deconflict them.
 - (4) Timelines.

2d5 The engineer battalion NBC NCO communicates information.

- a) NBC NCO reports CCIR and other critical information concerning ongoing and future missions along with recommendations to: [FM 5-71-3, pp. 2-3 through 2-4]

- (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.
 - (4) Maneuver brigade NBC NCO.
- b) NBC NCO reports engineer battalion NBC situation and analysis of CCIR, IR, and routine information to other engineer battalion staff sections and external headquarters/staff officers. [FM 5-71-3, pp. 2-3 through 2-4]
- (1) Maneuver brigade/division engineer NBC NCO.
 - (2) Engineer battalion subordinate commanders and leaders.
 - (3) Supporting NBC units (e.g., decontamination, reconnaissance).
 - (4) Engineer battalion staff officers who need the information.
 - (5) Smoke platoons.
- c) NBC NCO coordinates with the maneuver brigade CMLO and supporting decontamination units to confirm deliberate decontamination plans and preparations. [FM 5-71-3, pp. 2-3 through 2-4]
- 2d6 The engineer Bn SO and communications section communicate information.
- a) Engineer Bn SO reports CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [FM 5-71-3, p. 2-3]
- (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.
 - (4) Maneuver brigade signal officer.
 - (5) Division signal battalion commander.
 - (6) Engineer battalion subordinate commanders and leaders.
 - (7) Engineer battalion staff officers who need the information.
- b) Engineer Bn SO coordinates with the engineer battalion S3, adjacent units, and divisional signal battalion headquarters. [FM 5-71-3, p. 2-3]
- (1) Confirms allocation and locations of signal assets and capabilities.
 - (2) Acquires signal equipment to supplement engineer battalion CPs and subordinate units which require special communications equipment.
- 2d7 Engineer battalion CSS officers communicate information.

- a) Engineer battalion CSS officers report CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [FM 5-71-3, Chap 6]
 - (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.
- b) Engineer battalion CSS officers report logistical situation and analysis of CCIR, IR, and routine information to engineer battalion staff and external sources: [FM 5-71-3, Chap 6]
 - (1) Engineer battalion subordinate commanders and leaders.
 - (2) Maneuver brigade rear CP.
 - (3) FSB staff.
 - (4) Engineer battalion staff officers who need the information.
 - (5) Division engineer brigade CSS staff.
- c) Engineer battalion CSS staff performs coordination with engineer brigade staff, maneuver brigade staff, engineer battalion staff, and engineer battalion units: [FM 5-71-3, Chap 6]
 - (1) To identify additional requests for support.
 - (a) Transportation assets by the S4 and HHC commander.
 - (b) Medical treatment and evacuation augmentation by the medical section sergeant.
 - (c) Maintenance support for vehicles and weapon systems and for recovery of damaged vehicles or return of repaired vehicles by the BMT.
 - (2) To coordinate the transportation and throughput of supplies and cargo (e.g., obstacle materials) to engineer battalion units by the S4.
 - (3) To coordinate routine, emergency, and critical resupply operations (e.g., delivery times, types and quantities of supplies required) by the S4.
 - (4) To receive and process replacements by the S1.
 - (5) To track evacuation of personnel and casualties by the S1.
 - (6) To process awards, decorations, promotions, and legal actions by the S1.
 - (7) For security and protection of CSS units operating forward by the S4.
 - (8) To deconflict terrain requirements and projected locations for:
 - (a) Engineer battalion CSS units.
 - (b) Division and higher engineer units.
 - (9) To process requests for support of engineer battalion by the S4.
 - (a) Additional transportation assets.

- (b) Medical augmentation and support.
 - (c) Additional supplies.
 - (d) Intermediate direct support/direct support/intermediate general support maintenance support for vehicles and weapon systems, and for recovery of damaged vehicles or return of repaired vehicles.
- (10) Engineer battalion S4 coordinates the passage of engineer battalion supplies and cargo through adjacent units.
 - (11) Engineer battalion S4 coordinates routine, emergency, and critical resupply of the engineer battalion (e.g., delivery times, types, and quantities of supplies required).
 - (12) Engineer battalion S1 receives and processes engineer battalion replacements.
 - (13) Engineer battalion S1 tracks evacuation of engineer battalion personnel and casualties.
 - (14) Engineer battalion S1 processes awards, decorations, promotions, and legal actions of engineer battalion personnel.
- d) CSS officers provide information to the engineer battalion S2 and S3 to support engineer battalion IPB/EBA. [FM 5-71-3, pp. 2-16 and 2-17]
 - (1) HHC commander reports enemy activity in the vicinity of the engineer battalion rear CP or field trains.
 - (2) BMT reports status of engineer equipment.
 - (3) S1 reports the status of engineer personnel.
 - (4) S4 reports the status of engineer-related supplies, other materials, and transportation operations.
- 3. **The engineer battalion commander visualizes the battlefield.** [ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0003, 5-1-0007, 5-1-0018, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0028, 5-1-0039; FM 34-130, Chap 2; FM 5-71-3, Chap 1 and 2; FM 101-5, Chap 3, Appendices F, J]
 - 3d. The engineer commander informs the supported maneuver brigade commander of the results of his assessment. [AN]
 - 3d1 The engineer battalion cannot accomplish its assigned mission without additional assets or modification of the concept.
 - 3d2 The engineer battalion can accomplish its assigned mission.
 - 5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
 - 5e. The engineer battalion commander, as the maneuver brigade engineer, participates in maneuver brigade rehearsals. [FM 5-71-3, p. 2-1]

- 5e1 Describes movement and employment of engineer assets in support of the maneuver brigade.
- 5e2 Ensures that mobility/countermobility/survivability (M/CM/S) operations are synchronized with maneuver.
- 5f. The ABE participates in the maneuver brigade rehearsals. [FM 5-71-3, p. 2-2]
- 5f1 Coordinates with the brigade (Bde) S3 to refine brigade plans and products.
- 5f2 Records decisions and changes to the brigade plan.
- 5f3 Provides relevant information to the engineer battalion CPs.

Component B: Staff and subordinate commanders provide tactically sound recommendations.

- 1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
- 1b. The engineer battalion CPs maintain communications.
- 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (4) The engineer battalion commander reacts to events by:
 - (d) Recommending changes to the brigade commander.
- 2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
- 2a. The engineer battalion commander and staff acquire information.

- 2a1 The engineer battalion commander, using techniques such as standardized net calls, schedules and conducts a coordination session with key staff members and subordinate leaders prior to mission execution to collect information. [FM 5-71-3, p. 2-23]
- d) Problems and corrective action.
- 2d. The engineer battalion commander and staff communicate information.
- 2d4 The engineer battalion S3 and operations section communicate information.
- a) Engineer battalion S3 and operations section report and disseminate CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [ARTEP 5-145-MTP, Task 5-1-0026/1f; FM 5-71-3, p. 2-15]
- (1) Engineer battalion commander.
 - (2) Engineer battalion XO.
 - (3) Engineer companies and other subordinate units.
 - (4) Engineer battalion rear CP.
 - (5) Maneuver brigade main CP.
 - (6) ABE.
- 2d5 The engineer battalion NBC NCO communicates information.
- a) NBC NCO reports CCIR and other critical information concerning ongoing and future missions along with recommendations to: [FM 5-71-3, pp. 2-3 through 2-4]
- (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.
 - (4) Maneuver brigade CMLO.
- 2d6 The engineer Bn SO and communications section communicate information.
- a) Engineer Bn SO reports CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [FM 5-71-3, p. 2-3]
- (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.
 - (4) Maneuver brigade signal officer.

- (5) Division signal battalion commander.
- (6) Engineer battalion subordinate commanders and leaders.
- (7) Engineer battalion staff officers who need the information.

2d7 Engineer battalion CSS officers communicate information.

- a) Engineer battalion CSS officers report CCIR and other critical information concerning the ongoing and future missions along with recommendations to: [FM 5-71-3, Chap 6]
 - (1) Engineer battalion commander.
 - (2) Engineer battalion S3.
 - (3) Engineer battalion XO.

4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]

4b. The engineer battalion commander conducts the MDMP in a time-constrained environment, with or without staff assistance. [FM 5-71-3, p. 2-15]

4b2 The engineer battalion commander and staff simultaneously monitor, plan, and direct all aspects of engineer battalion operations (e.g., preparations for the current mission, changes to the current plan, and the next mission being formulated).

4b6 The engineer battalion commander may request information from the staff in developing the new SOEO. [ARTEP 5-145-MTP, Task 5-1-0002]

- f) The engineer battalion staff assists the engineer battalion commander in his analysis of the plan by providing information. [ARTEP 5-145-MTP, Task 5-1-0002, subtask 2]
 - (1) Reviews updated estimates and provides information based on queries.
 - (2) Provides input on previous COAs which could be used as the new plan without detailed COA development.

4b8 Engineer battalion commander describes his revised concept and COA to his staff. [FM 5-71-3, p. 2-19, B14, B15]

- c) If time is available, engineer battalion staff conducts mission analysis and:
 - (3) Staff officers provide recommendations, as appropriate, on their functional areas to the commander. [FM 5-71-3, p. 2-1 through 2-4]

4b13 The engineer battalion commander reviews his initial CCIR to determine: [FM 5-71-3, p. 2-19]

- a) Validity of initial CCIR.
 - b) New CCIR required to provide the engineer battalion commander with the information needed to make decisions about the plan.
- 4d. The engineer battalion commander approves FRAGOs and directs members of the staff to issue FRAGOs based on his approval or in compliance with his guidance. [FM 5-71-3, p. 2-23]
- 4d2 The engineer battalion commander collects the engineer battalion leadership to conduct leaders reconnaissance, and to brief and disseminate updated orders, DST, engineer execution matrix, and other mission documents, if sufficient time is available. [FM 5-71-3, p. 1-8]
- b) The engineer battalion staff works within the commander's intent to:
 - (1) Direct and control units.
 - (2) Allocate resources to support the desired endstate.
 - (3) Alert the commander to changes in the enemy or friendly situations that may require change to orders and plans.
- 4e. The engineer battalion staff coordinates internally and with higher, adjacent, and supporting elements to coordinate and integrate the new plan. [FM 5-71-3, pp. 2-1 through 2-4]

OUTCOME 4 ASSESSMENT

Outcome 4: Sound (feasible, suitable, acceptable) decisions are made by the engineer battalion commander and others within the engineer battalion.	Adequate	Marginal	Not Adequate
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(Use Tables 2, 3, 5, and 8)

Assessment Statements

- Engineer battalion commander determines whether projected endstates related to METT-T and BOS factors will still permit the engineer battalion to accomplish its mission.
- Engineer battalion commander projects outcome of current battle to determine future requirements and actions.
- If the current plan is inadequate for the commander's revised assessment, the engineer battalion commander adapts the military decision making process to the time and staff that are available for planning:
 - Current products are modified.
 - Engineer battalion commander develops a new SOEO.
 - Typically, one friendly and one enemy COA are analyzed.
 - Engineer battalion commander issues directive and very specific guidance.
- Revised concept and resulting plan meet the following criteria:

--	Suitable	Plan accomplishes engineer battalion mission.
--	--	Plan meets the maneuver brigade commander's intent.
--	--	Plan accomplishes the engineer battalion commander's intent and desired endstate.
--	Feasible	
--	--	Plan can be executed within available time (includes duration and distance factors).
--	--	Plan can be accomplished with current condition of roads and terrain and the required depth of action and terrain available.
--	--	Engineer battalion has the personnel and all required equipment and material, to include bridging equipment, to accomplish the mission.
--	Acceptable	

- Plan can be conducted within acceptable costs/risks.
- Control measures are firm enough to prevent accidents and fratricide.
- Plan is flexible enough to permit reaction to changes in the situation.
- Risks to mission completion, personnel, and equipment are mitigated.

OUTCOME 4 DIAGNOSTIC AID

OUTCOME 4: Sound (feasible, suitable, acceptable) decisions are made by the engineer battalion commander and others within the engineer battalion.

Task Elements

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1a. Engineer battalion CPs manage means of C3.
 - 1a1 The engineer battalion commander modifies/updates CCIR based on the current situation: [ARTEP 5-145-MTP, Task 5-1-0002]
 - a) Planned progress of preparatory tasks (e.g., changes in engineer equipment, survivability position construction, obstacle construction).
 - b) Changes to METT-T (e.g., new guidance or missions from the supported maneuver brigade) which cause the engineer battalion commander to modify his CCIR.
 - c) Engineer battalion commander's visualization of current preparations progress and desired endstate.
 - 1b. The engineer battalion CPs maintain communications.
 - 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (2) The engineer battalion commander assesses the situation and directs changes to operations as necessary to respond to battlefield events.
 - (4) The engineer battalion commander reacts to events by:
 - (a) Repositioning engineer assets under engineer battalion control.
 - (b) Changing missions of companies under engineer battalion control.
 - (c) Changing priorities.

(d) Recommending changes to the brigade commander.

2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and, maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]

2a. The engineer battalion commander and staff acquire information.

2a1 The engineer battalion commander, using techniques such as standardized net calls, schedules and conducts a coordination session with key staff members and subordinate leaders prior to mission execution to collect information. [FM 5-71-3, p. 2-23]

f) Engineer battalion commander and staff continuously conduct assessment of risks to mission success and hazards for engineer operations.

3. **The engineer battalion commander visualizes the battlefield.** [ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0003, 5-1-0007, 5-1-0018, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0028, 5-1-0039; FM 34-130, Chap 2; FM 5-71-3, Chap 1 and 2; FM 101-5, Chap 3, Appendices F, J]

3a. The engineer battalion commander updates his estimate based on his assessment of incoming information relating to: [FM 5-71-3, p. 2-1]

3a1 Mission:

a) Identifies changes to:

- (1) The maneuver brigade and division commanders' intents.
- (2) The maneuver brigade operations plan relevant to engineer operations.

(3) The engineer battalion mission.

(4) Engineer task organization.

b) Progress and completion of engineer battalion preparation activities compared to needed endstate before the battle to include:

(1) Planning and refinement of plans.

(2) Coordination.

(3) Preparations by subordinate units.

3a2

Enemy:

- a) Estimate accuracy:
 - (1) Enemy engineer capabilities.
 - (2) Projected enemy engineer COA.
 - (3) Engineer battalion commander's essential elements of friendly information (EEFI).
- b) Collection plan responsiveness; status of collection and acquisition of necessary information.
 - (1) PIR and IR:
 - (a) Whether they are being filled.
 - (b) Whether they are adequate to focus requirements for information on the enemy.
 - (2) Adequacy of engineer battalion collection assets' positions and activities.
 - (a) Engineer reconnaissance patrols.
 - (b) Engineer battalion security elements and subordinate units tasked to perform collection requirements.
 - (c) Adjacent and forward units.
- c) Effectiveness of engineer battalion OPSEC measures.

3a3

Troops:

- a) Designated friendly forces information requirements (FFIR) utility.
- b) Capability to accomplish the engineer battalion mission and achieve the intent based on present capabilities, such as:
 - (1) Systems (vehicles, equipment) which are ready for battle. To include all supported maneuver brigade mobility assets such as mine plows and rollers.
 - (2) Engineer systems which became available since initial force ratio analysis.
 - (3) Projections from BMT of engineer systems which will be available prior to mission execution and those which will not be available.
 - (4) Adequacy of engineer battalion level OPORD synchronization, coordination, integration, and refinements based on rehearsals, backbriefs, reports from the engineer battalion S3, and personal inspections.
- c) Impact of locations, activities, and intentions of adjacent units (left, right, front, rear, and higher) on engineer battalion battle preparations.
- d) Subordinate unit plans and preparation activities:
 - (1) Subordinate commanders, and leaders two levels down as time allows, backbrief their missions.
 - (2) Physical preparations of engineer companies and platoons to accomplish their missions.
 - (a) Troop leading procedures.
 - (b) Pre-combat inspections.

(3) Adequacy of engineer company and other engineer battalion elements' synchronization, integration, and coordination of engineer support, as indicated by:

- (a) Reconnaissance.
 - (b) Rehearsals.
 - (c) Backbriefs.
 - (d) Visits and inspections.
- (4) Construction of obstacles, fighting positions, and protective positions in accordance with timelines.

3a4 Terrain:

- a) Accuracy of initial MCOO and impact on the SOEO.
 - (1) Terrain factors (OCOKA).
 - (a) Observation and fields of fire.
 - (b) Cover and concealment.
 - (c) Obstacles.
 - (d) Key terrain.
 - (e) Avenues of approach.
 - (2) Obstacles and progress of engineer battalion efforts to reinforce the terrain.
- b) Weather and forecasted weather factors' validity.
 - (1) Visibility (including fog and cloud cover) and light data.
 - (2) Effects of weather.
 - (a) Wind speed and directions.
 - (b) Precipitation data.
 - (c) Temperature and humidity.
 - (d) Impact on engineer operations.

3a5 Time:

- a) Accomplishment of key mission preparations in accordance with planned timelines.
- b) Sufficiency of time available to complete all tasks based on what has/has not been accomplished.

3b. The engineer battalion commander projects the endstate of engineer support for the current battle based on his evaluation of the current plan, status of engineer operations, and by anticipating factors associated with each BOS. [FM 5-71-3, p. 1-8]

- 3b1 Intelligence.
- a) Information that confirms or contradicts the IPB. [ARTEP 5-145-MTP, Task 5-1-0027; FM 5-71-3, p. 2-2]
 - b) Information collected by engineer reconnaissance elements. [ARTEP 5-145-MTP, Task 5-1-0413]
- 3b2 Maneuver.
- a) Movement and repositioning criteria support the mission for the engineer battalion operating an engineer TF. [FM 5-71-3, pp. 3-10 and 5-9]
 - (1) Reconnaissance, marking, and preparation of routes for use by subordinate units.
 - (2) Movement can be performed without exposing the engineer TF to enemy fire during disengagement and displacement.
 - (3) Movement and repositioning times can be achieved.
 - b) Subordinate unit plans are complete, to include branches and sequels, and achieve his intent. [FM 5-71-3, p. 1-7]
- 3b3 Mobility and survivability.
- a) Mobility support activities are implemented. [FM 5-71-3, Chap 3]
 - (1) Priorities for mobility support are achieved.
 - (2) Task organization of engineer mobility assets is accomplished in accordance with designated timelines.
 - (3) The maneuver brigade commander, the maneuver brigade engineer, and fire support officer (FSO) adjust the fire support plan to support breaching operations.
 - (4) Engineer task organization optimizes the maneuver brigade's capability to maintain mobility.
 - (5) Friendly obstacles do not interfere with maneuver brigade mobility. [ARTEP 5-145-MTP, Task 5-1-0002/2b1b3, 5-1-0002/3b.
 - (6) The support force is able to execute effective suppressive fires.
 - (7) The assault force is capable of accomplishing its mission.
 - (8) The breach force can reduce the enemy obstacles.
 - (9) The availability of breaching assets supports planned breaching operations.
 - (10) Breach lanes support maneuver brigade mobility requirements.
 - (11) The terrain allows the engineer battalion to assemble near the breach site.
 - (12) Resources are provided for lane improvement.
 - (13) Resources are provided for detailed marking of lanes.
 - b) Countermobility activities are implemented. [FM 5-71-3, p. 4-7]
 - (1) Obstacle material consumption reports are accurate and consistent with projected requirements.

- (2) Reports of minefield intention, initiation, and completion are complete and accurate.
- (3) Locations of CL IV and CL V supply points support maneuver TF and engineer company plans.
- (4) Obstacles support the maneuver brigade commander's scheme of maneuver. [FM 90-7, Chap 2]
 - (a) Are in depth throughout the sector to shape the battlefield and to fix, turn, disrupt, and block the enemy.
 - (b) Obstacle groups are emplaced to accomplish the function specified by the maneuver brigade.
 - (c) Obstacle gap and lanes closure signals and triggers are established.
 - (d) Scatterable mine (SCATMINE) employment plans are coordinated and can be implemented to achieve the planned effects. [FM 20-32, Chap 6]
 - (e) Status reports indicate work in maneuver brigade designated obstacle belts is being accomplished in accordance with designated timelines.
- e) Survivability and fighting position construction operations are implemented. [FM 5-71-3, p. 4-6]
 - (1) Weather and soil conditions permit efficient employment of earth-moving assets per the engineer estimate.
 - (2) Priorities for position construction are adhered to.
 - (3) Protective obstacles provide close-in protection.
- f) Engineer battalion OPSEC, security forces, and subordinate unit local force protection operations are assessed; needed changes directed so that: [ARTEP 5-145, Task 5-2-0913]
 - (1) The engineer battalion is protected as it prepares for the mission.
 - (2) The enemy is denied information that provides indications of the commander's concept of the operation (e.g., engineer disposition and activities).

3b4 Fire support.

- a) Fire support for breaching operations is coordinated. [FM 5-71-3, p. 1-7]
- b) Obstacles and indirect fires are integrated. [FM 5-71-3, p. 1-8]
- c) Artillery delivered mine employment is coordinated. [FM 5-71-3, p. 1-8]

3b5 Air defense.

- a) Engineer battalion operations, such as breaching and obstacle emplacement, are protected from the enemy air threat. [FM 5-71-3, p. 1-8]
- b) CL IV/V supply points receive protection. [FM 5-71-3, p. 1-8]

3b6 Command and control.

- a) The engineer battalion commander assesses the stage of preparation compared to anticipated requirements and directs changes, if needed, to battalion preparation guidance. [FM 5-71-3, p. 1-8]
- b) Positioning of the engineer battalion commander, command group, and CPs allows effective and rapid direction during preparation, transition to mission execution, and for future operations. [FM 5-71-3, pp. 2-4 through 2-6]
- c) Information systems which aid command and control are available. [FM 5-71-3, pp. 2-23 through 2-25]
- d) Command and control measures to coordinate and synchronize engineer support during the mission are disseminated and understood. [ARTEP 5-145-MTP, Task 5-1-0018]
- e) Plans are made for disengagement of the engineer assets, termination of engineer work or reinforcement if enemy activity/capability exceeds capability to protect forces involved.

3b7 CSS.

- a) Transportation operations are executed as planned. [FM 5-71-3, p. 6-3]
 - (1) Required supplies, equipment, and personnel are delivered to subordinate units on designated MSRs and ASRs: transportation assets are used to back-haul equipment and material as appropriate.
 - (2) Availability and serviceability of materials and equipment are reviewed to ensure that they are transported in accordance with mission requirements.
 - (a) Requirements for additional assets are determined.
 - (b) Missions to and operations of the engineer battalion support platoon transportation assets are consistent with plans.
 - (c) Identifies new priorities for the engineer battalion support platoon.
 - (3) Impact on MSRs and ASRs by weather or enemy action are minimized.
 - (4) Maneuver brigade and engineer battalion transportation assets can transport CL IV and CL V obstacle materials from throughput to engineer battalion and TF work sites.
- b) Supply operations result in the sustainment of the engineer battalion as planned. [FM 5-71-3, pp. 6-7 through 6-9]
 - (1) Routine resupply activities are conducted and units are resupplied as required.
 - (2) Emergency resupply activities are initiated and completed as required.
 - (3) Priorities for resupply are implemented and achieve desired results.
 - (4) CL IV/V obstacle material is available in required amounts.
 - (a) CL IV/V supply points are established.
 - (b) Obstacle materials are configured into packages to support all maneuver brigade subordinate units.
 - (c) Accountability of obstacle materials is maintained.
- c) Personnel operations are conducted as planned. [FM 5-71-3, pp. 6-12 and 6-13]

- (1) Morale, welfare, and recreation support satisfies requirements in accordance with the commander's guidance and priorities.
 - (a) Replacement personnel are inspected, issued equipment, and trained (if time is available) to ensure that they are prepared for combat.
 - (b) Replacement personnel are linked-up with units and are oriented on the engineer battalion and unit situation.
- (2) Subordinate units have trained personnel required to perform assigned tasks and mission.
 - (a) Unit strength matches tables of organization and equipment (TO&E) requirements or provides sufficient strength to accomplish assigned missions and tasks.
 - (b) Critical military occupational specialty (MOS) and skills shortages are determined and compensated for so units can accomplish assigned missions and tasks.
- d) Engineer battalion maintenance operations result in engineer equipment being mission ready. [FM 5-71-3, pp. 6-9 through 6-12]
 - (1) Units are brought to fully mission capable status according to commander's repair priority guidance.
 - (2) Maintenance, cannibalization, and controlled substitution/exchange operations are being performed as directed.
 - (3) Preventive maintenance checks and services and periodic services are conducted on all vehicles and equipment.
 - (4) Maintenance support is provided to units that are assigned, attached, in direct support, and under operational control.
 - (5) Recovery operations.
- e) Engineer battalion medical operations comply with stated guidance and intent. [FM 5-71-3, pp. 6-13 and 6-14]
 - (1) Subordinate leaders implement measures to prevent, reduce, and combat battlefield stress.
 - (2) Required support in forms of medical personnel, supplies, and equipment are available and positioned to support the concept of the operation.
 - (3) Evacuation plan and casualty tracking systems are coordinated with all the engineer battalion leaders.
- 3c. The engineer battalion commander anticipates requirements and actions based on his projection of the outcome of the engineer support to the current battle. [FM 5-71-3, p. 1-8]
- 3c1 Intelligence:
 - a) Adjustments necessary to the PIR.
 - b) Additional intelligence collection assets needed.
 - c) Mission changes for intelligence collection assets.

- 3c2 Maneuver for the engineer battalion operating as a TF:
- a) Missions appropriate for all subordinate units.
 - b) Repositioning or reorientation required for units at the end of the current battle.
 - c) Direction or guidance given to subordinate commanders to reduce ambiguity for future operations.
 - d) Impact of adjacent unit dispositions, strength, activities, capabilities, and missions on projected engineer Bn TF operations.
- 3c3 Fire support:
- a) Changes to planned obstacle locations requiring changes to planned artillery targets.
 - b) Additional fire support required for breaching operations.
- 3c4 Command and control:
- a) Adjustments required in engineer battalion command and control.
 - b) Additional communications capability required.
 - c) Impact of time on future actions.
 - d) Adjustments necessary to command and control graphics.
 - e) Adjustments necessary to the DST and other operational matrixes.
- 3c5 Air defense BOS:
- a) Repositioning requirements for air defense assets to support engineer operations.
 - b) Adjustments to the air defense (AD) priorities.
 - c) Requirements for additional air defense assets.
- 3c6 M/S BOS:
- a) Additional M/CM/S assets required.
 - b) Adjustments to the mobility tasks required.
 - c) Countermobility tasks required.
 - d) Survivability tasks required.
 - e) MOPP status.
 - f) Decontamination requirement.

- 3c7 CSS BOS:
- a) Additional CSS units required.
 - b) Adjustments necessary in the positioning of logistics support units and nodes.
 - c) Additional supplies, by class of supply required.
 - d) Additional personnel needed by MOS.
- 3c8 The commander assesses the impact of new FRAGOs from maneuver brigade or division engineer which direct changes to missions. [ARTEP 5-145-MTP, Task 5-1-002, subtask 1]
- a) Time required to plan and prepare for mission changes based on current mission timelines.
 - b) Ability of engineer battalion to respond to the new situation based on level of mission preparedness.
 - (1) Engineer units available to respond without impacting engineer battalion ability to perform the current mission.
 - (2) Availability of CS, CSS, and supplies to support the new situation without impacting on support necessary for the current mission.
 - c) Capability of the engineer battalion staff to dedicate time and effort to plan and coordinate new missions; impact of diverting key staff members from monitoring preparations for the current mission to planning for a new mission.
- 3e. The engineer battalion commander decides whether the current plan needs to be changed. [ARTEP 5-145-MTP, Task 5-1002, Subtask 4-7]
- 3e1 When the plan can be conducted without any adjustments or modifications, engineer battalion commander continues to monitor and direct mission preparation.
- 3e2 When the engineer battalion commander decides the plan must be modified; he determines: [FM 5-71-3, p. 2-8]
- a) COAs previously developed which can be modified and developed as the new plan, or develops an entirely new plan.
 - b) Time available to develop, coordinate, and implement a new plan.
 - c) Subordinate units' ability to complete new preparation requirements under the new plan and task organization.
 - d) Engineer battalion staff's ability to continue to monitor and direct current engineer battalion activities while meeting new planning requirements.
- 3e3 The engineer battalion commander determines effects on the MDMP based on complexity, potential confusion on the battlefield, staff availability, and time available. [FM 5-71-3, p. 2-15]

4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]
- 4b. The engineer battalion commander conducts the MDMP in a time-constrained environment, with or without staff assistance.
[FM 5-71-3, p. 2-15]
- 4b1 Products developed during the MDMP for the current mission are used as reference points from which modifications are made to predetermined branches and sequels.
 - a) Weather analysis.
 - b) Terrain analysis.
 - c) Enemy engineer capabilities and updated IPB/EBA products.
 - d) Updated staff estimates.
 - (1) Engineer battalion capabilities.
 - (2) Constraints.
 - e) PIR, EEFI, and FFIR requested by the commander.
- 4b4 The engineer battalion commander completes an update of his estimate.
 - a) Determines the current situation together with expected battle outcome and future state of both friendly and enemy forces.
 - b) Recognizes similarities and differences between the initial plan and the current and projected situation occurring during combat.
 - c) Determines friendly force posture and enemy probable intentions.
- 4b5 The engineer battalion commander conducts a rapid mission analysis by:
 - a) Identifying specified tasks.
 - b) Identifying implied tasks.
 - c) Identifying essential tasks.
 - d) Identifying limitations.
 - e) Developing the restated mission.
- 4b6 The engineer battalion commander may request information from the staff in developing the new SOEO. [ARTEP 5-145-MTP, Task 5-1-0002]
 - a) Uses new maneuver brigade COA to develop the SOEO.

- b) Uses products and analyses developed during the initial mission MDMP to define branches and sequels for consideration.
 - c) Provides recommendations to modify existing branches and sequels to meet new requirements.
 - d) Provides recommendations on developing new branches and sequels based on new requirements.
 - e) The commander may request information from the staff to support his COA development.
 - (1) BOS specific information from selected staff members.
 - (2) Information available in products developed during the initial mission MDMP.
 - f) The engineer battalion staff assists the engineer battalion commander in his analysis of the plan by providing information. [ARTEP 5-145- MTP, Task 5-1-0002, subtask 2]
 - (1) Reviews updated estimates and provides information based on queries.
 - (2) Provides input on previous COAs which could be used as the new plan without detailed COA development.
- 4b7 The engineer battalion commander develops the new SOEO, considers: [FM 5-71-3, p. 2-11]
- a) The current situation and information.
 - b) Whether the engineer battalion has the assets and resources to execute the new SOEO.
 - c) Maneuver brigade commander's intent and COA.
 - d) The desired endstate for the engineer battalion as compared to anticipated maneuver brigade endstate.
 - e) METT-T factors:
 - (1) Mission: Identifies specified and implied tasks which his engineer battalion must accomplish.
 - (2) Enemy: The engineer battalion commander identifies:
 - (a) Single or limited number of enemy COA which the maneuver brigade must defeat.
 - (b) Enemy strength, location, disposition, activity, equipment, and capabilities.
 - (3) Terrain and weather: The engineer battalion commander identifies specific aspects of OCOKA, vegetation, soil type, hydrology, climatic conditions, and visibility.
 - (4) Troops: The commander analyzes the engineer battalion's and engineer companies' status in terms of capability and what he believes necessary to accomplish the mission.
 - (a) Capabilities, strengths, and weaknesses of subordinate commanders and units.
 - (b) Engineer systems and equipment.
 - (c) Disposition.
 - (d) Supplies.
 - (5) Time: The engineer battalion commander determines the time available for planning, preparing, and executing the operation.

- 4b8 Engineer battalion commander describes his revised concept and COA to his staff. [FM 5-71-3, p. 2-19, B14, B15]
- a) The engineer battalion commander expresses COA concepts:
- (1) Intent and desired endstate.
 - (2) SOEO.
 - (a) Priorities of engineer support.
 - (b) Concept for SCATMINES.
 - (3) Enemy COA(s) to consider.
 - (4) CCIR.
 - (5) Limitations.
 - (6) Risk.
 - (7) Maneuver brigade COA.
- b) The engineer battalion commander provides the concept and guidance to the staff for detailed COA development and mission analysis.
- c) If time is available, engineer battalion staff conducts mission analysis and:
- (1) Develops details on COA provided by the commander.
 - (2) Develops branches and sequels to the selected COA which adhere to the commander's guidance.
 - (3) Staff officers provide recommendations, as appropriate, on their functional areas to the commander. [FM 5-71-3, p. 2-1 through 2-4]
- 4b9 The engineer battalion commander performs a suitability-feasibility-acceptability analysis of the new plan by himself or with staff assistance. [FM 5-71-3, pp. 2-10 through 2-13]
- a) Suitability factors, which include:
- (1) New concept accomplishes the mission.
 - (2) New concept meets maneuver brigade and engineer battalion commander's intent.
- b) Feasibility factors, which include:
- (1) Time to execute the plan(s) as designed.
 - (a) Duration of events.
 - (b) Time and distance factors for movement.
 - (2) There is sufficient ground space to accomplish the plan(s) as designed.
 - (a) Roads and terrain support the plan.
 - (b) Depth of action.
 - (c) Adequate ground space.

- (3) Engineer battalion has the means to execute the plan(s) as designed.
- (a) Engineer battalion engineer assets versus the enemy engineer's (force ratios).
 - (b) The engineer battalion has the special equipment and personnel to accomplish the mission (e.g., bridging equipment, mine clearing, etc.).
 - (c) Impact on ongoing preparation activities.
 - (d) Impact on subordinate units.
 - (e) Requirements to alter task organization.
- c) Acceptability: mission can be accomplished within acceptable levels of risk in terms of mission success and loss of personnel and equipment.
- 4b10 The engineer battalion commander quickly compares COAs (if more than one).
- 4b11 The engineer battalion commander selects a COA and announces his decision to key engineer battalion staff members.
- 4b12 Mission risk assessment is conducted to ensure that conditions most likely to cause mission failure and accidents (including fratricide) have been mitigated.
- a) Engineer battalion units have been tasked within their capabilities.
 - b) Procedural and positive risk-reduction control measures have been implemented.
- 4b13 The engineer battalion commander reviews his initial CCIR to determine: [FM 5-71-3, p. 2-19]
- a) Validity of initial CCIR.
 - b) New CCIR required to provide the engineer battalion commander with the information needed to make decisions about the plan.

OUTCOME 5 ASSESSMENT

OUTCOME 5: Affected units and personnel receive relevant direction, changes, and refinements to plans in time to perform troop leading procedures and required preparation. (Use Tables 4, 5, and 6)

Component A: Staff issues WARNOs and FRAGOs.	Adequate	Marginal	Not Adequate
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Assessment Statements

- If situation warrants, the engineer battalion commander directs staff to prepare a FRAGO to change plans.
- The engineer battalion issues WARNOs to alert staff members and subordinate elements that the plan will be changed.
- FRAGO is complete:
 - Mission statement.
 - Commander's intent and concept of the operation.
 - Pertinent extracts from more detailed orders.
 - Task organization, if modified.
 - Control measures.
 - Changes to existing orders.
 - Modified timelines.
- Documents that support FRAGO are updated and reflect current commander's guidance:
 - Graphics.
 - DST.
 - Engineer execution matrix.
 - MCOO.
 - Situation and event templates.
- The engineer battalion FRAGO is distributed to all affected elements in time for the elements to perform troop leading procedures and required preparation.

- Subsequent FRAGOs are distributed as the plan is refined based on rehearsals, visits and inspections.
- Staff coordinates with higher, adjacent, and supporting elements to synchronize the revised plan.

Component B: Staff directs preparations for the battle.			
	Adequate	Marginal	Not Adequate

Assessment Statements

- Engineer battalion commander repositions engineer assets under engineer battalion control.
- Engineer battalion commander changes mission of companies under engineer battalion control.
- The engineer battalion staff monitors concurrence with timelines to ensure that preparations are complete by the designated time.
- The engineer battalion staff at the main CP:
 - Identifies and corrects problems identified during subordinate unit preparations.
 - Coordinates additional support from maneuver brigade or division engineer.
- The engineer battalion staff allocates resources to subordinate elements.

OUTCOME 5 DIAGNOSTIC AID

OUTCOME 5: Affected units and personnel receive relevant direction, changes, and refinements to plans in time to perform troop leading procedures and required preparation.

Task Elements

Component A: Staff issues WARNOs and FRAGOs.

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 1b. The engineer battalion CPs maintain communications.
 - 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]
 - b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (2) The engineer battalion commander assesses the situation and directs changes to operations as necessary to respond to battlefield events.
 - (4) The engineer battalion commander reacts to events by:
 - (a) Repositioning engineer assets under engineer battalion control.
 - (b) Changing missions of companies under engineer battalion control.
 - (c) Changing priorities.
 - (d) Recommending changes to the brigade commander.
2. **The engineer battalion commander and staff acquire, evaluate, and communicate information and maintain status.** [TRADOC Pam 11-9, Section IV; "Battle Command," pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
 - 2d. The engineer battalion commander and staff communicate information.

- 2d1 The engineer battalion commander communicates information. [FM 5-71-3, p. 2-1]
- a) Changes to his intent to subordinate commanders and staff.
 - b) Changes to the SOEO to the maneuver brigade commander and staff.
4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]
- 4a. The engineer battalion commander and/or staff issue WARNOs to alert staff members and subordinate elements of changes to the plan. WARNOs may include: [FM 5-71-3, p. 2-15]
- 4a1 The enemy situation, events, and the mission, task, or operation.
- 4a2 The division and brigade missions.
- 4a3 The division and brigade commanders' intents.
- 4a4 The engineer battalion commander's intent statement.
- 4a5 The earliest time of movement or degree of notice the commander gives to the main body.
- 4a6 Orders for preliminary action, reconnaissance, surveillance, and observation.
- 4a7 Service support instructions, any special equipment necessary, regrouping of transportation, or preliminary moves to assembly areas.
- 4a8 The rendezvous point or time for assembly of an orders group, whether commanders or representatives are to attend, and time needed for issuing written orders.
- 4c. The engineer battalion commander directs preparation of a FRAGO. [ARTEP 5-145-MTP, Task 5-1-0002, subtask 6.]
- 4c1 The engineer battalion commander provides guidance to the staff to prepare supporting documents: [FM 5-71-3, pp. D-11 through D-19]

- a) Graphics.
 - b) DST.
 - c) Engineer execution matrix.
 - d) MCOO.
 - e) Situation and event templates.
- 4c2 Engineer battalion staff prepares plans or orders. [ARTEP 5-145-MTP, task 5- 1-0007]
- a) The engineer battalion XO manages and supervises internal and external coordination by the staff to synchronize plan refinements.
 - b) The engineer battalion staff takes prompt action to accomplish the guidance given by the commander.
 - (1) Publishes refinements to orders, and planning and execution products such as DST, engineer execution matrix, and obstacle overlay.
 - (2) Initiates requests to higher and adjacent units for additional support.
- 4c3 The engineer battalion staff develops FRAGOs reflecting changes to the initial plan for the engineer battalion commander's approval:
- a) Graphics and control measures for the operation.
 - b) DST and engineer execution matrix.
 - c) Obstacle overlay.
 - d) Communications plan.
 - e) CSS plan.
- 4d. The engineer battalion commander approves FRAGOs and directs members of the staff to issue FRAGOs based on his approval or in compliance with his guidance. [FM 5-71-3, p. 2-23]
- 4d1 Complete FRAGOs are issued which contain: [FM 5-71-3, p. 2- 23 and D-12]
- a) Mission statement.
 - b) Commander's intent and concept of the operation.
 - c) Pertinent extracts taken from more detailed orders.
 - d) Task organization, if modified.
 - e) Control measures that promote initiative, synchronization, and agility while minimizing exposure to fratricide.
 - f) Timely changes to existing orders.

- 4d2 Engineer battalion staff prepares plans or orders. [ARTEP 5-145-MTP, task 5-1-0007]
- a) The engineer battalion XO manages and supervises internal and external coordination by the staff to synchronize plan refinements.
 - b) The engineer battalion staff takes prompt action to accomplish the guidance given by the commander.
 - (1) Publishes refinements to orders, and planning and execution products such as DST, engineer execution matrix, and obstacle overlay.
 - (2) Initiates requests to higher and adjacent units for additional support.
 - c) The engineer battalion staff at the main CP refines plans, facilitates planning for future operations, identifies and corrects problems identified during subordinate unit preparations, and coordinates additional support from maneuver brigade or division engineer.
- 4d3 The engineer battalion staff develops FRAGOs reflecting changes to the initial plan for the engineer battalion commander's approval:
- a) Graphics and control measures for the operation.
 - b) DST and engineer execution matrix.
 - c) Obstacle overlay.
 - d) Communications plan.
 - e) CSS plan.
- 4d. The engineer battalion commander approves FRAGOs and directs members of the staff to issue FRAGOs based on his approval or in compliance with his guidance. [FM 5-71-3, p. 2-23]
- 4d1 Complete FRAGOs are issued which contain: [FM 5-71-3, p. 2-23 and D-12]
- a) Mission statement.
 - b) Commander's intent and concept of the operation.
 - c) Pertinent extracts taken from more detailed orders.
 - d) Task organization, if modified.
 - e) Control measures that promote initiative, synchronization, and agility while minimizing exposure to fratricide.
 - f) Timely changes to existing orders.

- 4d2 The engineer battalion commander collects the engineer battalion leadership to conduct leaders reconnaissance, and to brief and disseminate updated orders, DST, engineer execution matrix, and other mission documents, if sufficient time is available. [FM 5-71-3, p. 1-8]
5. a) Engineer battalion commander and staff refine the plan to correct problems identified during rehearsals.
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5h. The engineer battalion commander ensures that any refinements to the OPOD/FRAGO and all critical associated documents are updated, reflect his most current guidance, and are distributed. [FM 101-5, App H]
- 5h1 The battalion commander modifies guidance and orders based on continued preparation activities, rehearsals, and other METT-T information.
- 5h2 The engineer battalion staff refines original OPOD and all associated documents based on continued preparation activities, rehearsals, and other METT-T information.
- 5h3 The engineer battalion staff refines the FRAGO and all associated documents based on continued preparation activities, rehearsals, and other METT-T information.
- 5h4 The engineer battalion staff distributes refined/updated OPOD/FRAGO and associated documents to higher, supported, and subordinate headquarters.

Component B: Staff directs preparations for the battle.

1. **Engineer battalion command posts manage and maintain command, control, and communications.** [TRADOC Pam 11-9, Section IV; "Battle Command", pp. 43, 65; ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0413; FM 5-71-3, Chap 2; FM 101-5, Chap 3, 5, App J]
- 1b. The engineer battalion CPs maintain communications.
- 1b2 CPs locate where they can control the preparation for and transition to battle. [FM 5-71-3, pp. 2-4 through 2-6]

- b) The engineer battalion commander and TAC CP position prior to mission execution to exercise command and control during the initial stages of execution. [FM 5-71-3, p. 2-5]
 - (2) The engineer battalion commander assesses the situation and directs changes to operations as necessary to respond to battlefield events.
 - (3) The engineer battalion commander observes and controls the main effort.
 - (a) Directs the S3 to assist him in observing and controlling main effort.
 - (b) Directs the S3 to observe and control supporting efforts.
 - (4) The engineer battalion commander reacts to events by:
 - (a) Repositioning engineer assets under engineer battalion control.
 - (b) Changing missions of companies under engineer battalion control.
 - (c) Changing priorities.
 - (d) Recommending changes to the brigade commander.
4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBP-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]
- 4b. The engineer battalion commander conducts the MDMP in a time-constrained environment, with or without staff assistance. [FM 5-71-3, p. 2-15]
- 4b3 The engineer battalion commander and staff maintain the pace of engineer battalion preparations to be ready by the designated time, make changes in a timely manner, and, if appropriate, plan for a future mission.
- 4d. The engineer battalion commander approves FRAGOs and directs members of the staff to issue FRAGOs based on his approval or in compliance with his guidance. [FM 5-71-3, p. 2-23]
- 4d2 The engineer battalion commander collects the engineer battalion leadership to conduct leaders reconnaissance, and to brief and disseminate updated orders, DST, engineer execution matrix, and other mission documents, if sufficient time is available. [FM 5-71-3, p. 1-8]
- b) The engineer battalion staff works within the commander's intent to:
 - (1) Direct and control units.
 - (2) Allocate resources to support the desire endstate.
 - (3) Alert the commander to changes in the enemy or friendly situations that may require change to orders and plans.

- 4e. The engineer battalion staff coordinates internally and with higher, adjacent, and supporting elements to coordinate and integrate the new plan. [FM 5-71-3, pp. 2-1 through 2-4]
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5a. The engineer battalion commander performs visits and inspections.
- 5a3 The engineer battalion commander assesses the state of mission preparedness through inspections and visits. [FM 5-71-3, p. 2-23]
 - a) Questions subordinate leaders down to platoon leaders and mission critical equipment operators and compares their concepts of the operation with his to ensure that the engineer battalion plan is synchronized at all levels.
 - b) Concentrates on those units and officers that demonstrate leadership weaknesses; checks, listens, and observes to be sure tasks are understood.
 - c) Inspects and spot-checks previously identified weaknesses to ensure that they have been corrected.
 - d) Makes a subjective assessment of cohesion, morale, and esprit and implements corrective actions when needed.
 - e) When actions taken are not in accordance with decisions, standing operating procedures (SOP), Army standards, and the OPOD, the commander makes corrections.
 - f) Takes actions to ensure correction of noted problems.
 - g) Expedites actions, fixes problems, ensures compliance with guidance, and sets/refines standards.
 - h) Manages his time and prioritizes his visits to visit at least those units most critical to the execution of his intent; e.g.,:
 - (1) The engineer supporting the maneuver brigade main effort.
 - (2) The unit or activity he will be with during the battle.
 - i) Informs the engineer battalion XO and his other representatives inspecting preparations of any changes or refinements to the plan which he has directed.
- 5i. Engineer battalion subordinate units continue final battlefield preparation based on refined/updated OPOD/FRAGO and associated documents. [AN]

OUTCOME 6 ASSESSMENT

OUTCOME 6: Subordinate leaders demonstrate an understanding of the critical elements of their own mission, the engineer battalion mission, and the engineer battalion commander's intent. (Use Tables 2 and 6)

Component A: Subordinate leaders demonstrate a clear understanding of the concept of operations through backbriefs.	Adequate	Marginal	Not Adequate
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Assessment Statements

- When a FRAGO is issued, the engineer battalion commander receives a confirmation briefing from subordinate leaders.
- The engineer battalion commander conducts backbriefs with the engineer battalion staff and subordinate commanders during and after inspections and visits.
- During backbriefs, the engineer battalion staff and subordinate leaders describe how their schemes of engineer operations will be conducted, including:
 - How their concept of the operation supports the engineer battalion commander's intent and contributes to the engineer battalion mission.
 - The level of preparation achieved.
 - Preparation activities still to be completed.
 - How they will adhere to the mission timelines.

Component B: Commanders and staff demonstrate understanding of their mission, the engineer battalion mission, the commanders' intents, and mission essential tasks through rehearsals.			
	Adequate	Marginal	Not Adequate

Assessment Statements

- Engineer battalion rehearsal technique (e.g., small-scale, tactical exercise without troops (TEWT), or dress rehearsal) is appropriate for the time available.
- Rehearsal tasks are prioritized to ensure that participants demonstrate acceptable levels of competence on key/critical tasks.
- The number of engineer battalion systems participating in the rehearsal is appropriate to the amount of time and space available.
- Members of the engineer battalion provide relevant information and demonstrate their actions as summarized in Table 6.
- Rehearsal is as realistic as conditions allow:
 - Enemy is replicated accurately.
 - Brigade operations are replicated accurately.
 - If time allows, the rehearsal includes both an initial walk-through with actions explained and a subsequent iteration at near combat speed with minimal guidance.
 - Plan is integrated with respect to all BOS.

OUTCOME 6 DIAGNOSTIC AID

OUTCOME 6: Subordinate leaders demonstrate an understanding of the critical elements of their own mission, the brigade mission, brigade commander's intent, and mission essential tasks.

Task Elements

Component A: Subordinate leaders demonstrate a clear understanding of the concept of operations through backbriefs.

3. **The engineer battalion commander visualizes the battlefield.** [ARTEP 5-145-MTP, Tasks 5-1-0002, 5-1-0003, 5-1-0007, 5-1-0018, 5-1-0025, 5-1-0026, 5-1-0027, 5-1-0028, 5-1-0039; FM 34-130, Chap 2; FM 5-71-3, Chap 1 and 2; FM 101-5, Chap 3, Appendices F, J]
- 3a. The engineer battalion commander updates his estimate based on his assessment of incoming information relating to: [FM 5-71-3, p. 2-1]
 - 3a3 Troops:
 - d) Subordinate unit plans and preparation activities:
 - (1) Subordinate commanders, and leaders two levels down as time allows, backbrief their missions.
 - (2) Physical preparations of engineer companies and platoons to accomplish their missions.
 - (a) Troop leading procedures.
 - (b) Pre-combat inspections.
4. **The engineer battalion commander directs changes to the operation or plan.** [TRADOC Pam 11-9, Section IV; ARTEP 5-145-MTP; "Battle Command," BCBP Command, BCBL-Ft. Leavenworth publication, p. 12; FM 5-71-3; FM 101-5, Chap 2, 4]
- 4d. The engineer battalion commander approves FRAGOs and directs members of the staff to issue FRAGOs based on his approval or in compliance with his guidance. [FM 5-71-3, p. 2-23]
- 4d2 The engineer battalion commander collects the engineer battalion leadership to conduct leaders reconnaissance, and to brief and disseminate updated orders, DST, engineer execution matrix, and other mission documents, if sufficient time is available. [FM 5-71-3, p. 1-8]

- 4d3 The engineer battalion commander conducts confirmation briefs with subordinate commanders to ensure that they understand the changes to plans and orders. [FM 5-71-3, p. 2-23]
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5a. The engineer battalion commander performs visits and inspections.
- 5a3 The engineer battalion commander assesses the state of mission preparedness through inspections and visits. [FM 5-71-3, p. 2-23]
- a) Questions subordinate leaders down to platoon leaders and mission critical equipment operators and compares their concepts of the operation with his to ensure that the engineer battalion plan is integrated at all levels.
 - b) Concentrates on those units and officers that demonstrate leadership weaknesses; checks, listens, and observes to be sure tasks are understood.
 - c) Inspects and spot-checks previously identified weaknesses to ensure that they have been corrected.
 - e) When actions taken are not in accordance with decisions, SOP, Army standards, and the OPORD, the commander makes corrections.
 - f) Takes actions to ensure correction of noted problems.
 - g) Expedites actions, fixes problems, ensures compliance with guidance, and sets/refines standards.
- 5c. The engineer battalion commander and staff coordinate and integrate engineer operations through backbriefs. [FM 5-71-3, p. 2-14]
- 5c2 Engineer battalion staff and subordinate commanders perform backbriefs and are responsible for: [FM 5-71-3, p. 2-23; LL - CALL Newsletter No. 93-3]
- a) Describing in detail how their schemes of engineer operations will be conducted.
 - b) Describing how their concept of the operation supports the engineer battalion commander's intent and contributes to the engineer battalion mission.
 - c) Describing the level of preparation achieved, preparation activities still requiring to be completed, and how they will adhere to the mission timelines.

Component B: Commanders and staff demonstrate understanding of their mission, the engineer battalion mission, the commanders' intents, and mission essential tasks through rehearsals.

5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5d. The engineer battalion commander coordinates and integrates engineer support through rehearsals.
- 5d1 The engineer battalion commander, staff, and subordinate units prepare rehearsals. [FM 5-71-3, p. 2-23]
 - a) Commander plans and revises rehearsal objective and schedules based on: [FM 5-71-3, p. 2-18]
 - (1) Time available.
 - (2) Training status of troops.
 - (3) Complexity of the operation.
 - (4) Unit familiarity with rehearsal techniques and SOPs.
 - (5) Review of earlier guidance and updates:
 - (a) Rehearsal goals and focus.
 - (b) Technique/method of rehearsal.
 - (c) Rehearsal participants.
 - (d) Rehearsal times and places.
 - b) The engineer battalion commander and S3 prioritize tasks to be rehearsed based on: [FM 5-71-3, pp. 2-1 through 2-3]
 - (1) Key (critical) events and activities to be performed in battle.
 - (2) Complexity.
 - c) The commander designates the number of engineer battalion level rehearsals.
 - d) XO/S3 designates times for rehearsals, such that:
 - (1) Subordinates have sufficient time to conduct rehearsals.
 - (2) Subordinate commanders are not required to be in two places at once.
 - e) The commander establishes outcomes, goals, and standards to be achieved.
 - (1) Subordinate commanders, staff, and leaders fully briefback their responsibilities within the parameters of the engineer battalion commander's intent.
 - (2) Identify vulnerabilities in the plan and determine the means to negate them.

- f) Engineer battalion and subordinate units prepare for rehearsals. [FM 5-71-3, p. 5-10]
- (1) Subordinate units develop at least a tentative plan prior to their participation in the engineer battalion rehearsal.
 - (2) Subordinate units conduct their own rehearsals.
 - (3) Subordinate units prepare vehicles, equipment, and soldiers prior to engineer battalion rehearsals.
 - (4) Engineer battalion level rehearsals are planned so that subordinate units are afforded time for their rehearsals.
 - (5) Build rehearsal site.
- g) The entire operation is thoroughly rehearsed using one of the following techniques depending on the time available: [FM 5-71-3, pp. 2-23 and 5-10; LL - CALL Newsletter No. 93-3]
- (1) Level I: Small scale rehearsals that do not involve mounted or dismounted maneuver. Techniques include:
 - (a) Map: Limited number of participants due to map size, used when time and space constraints are limited.
 - (b) Sand table/terrain model: Key leaders only, used to compensate for lack of sufficient time.
 - (c) Rock/stick drill: Same characteristics as sand table/terrain models, except that participants replicate their actions or their units actions.
 - (d) Radio: Participants as directed by the engineer battalion commander, used when time and enemy situations do not allow gathering of personnel; used to test radios and determine backup systems in the event of communications equipment failure.
 - (2) Level II: Focused rehearsals using selected personnel, usually key leaders, mounted in wheeled or tracked vehicles over similar terrain; technique used is tactical exercise without troops, where key leaders participate, conducted on actual mission terrain, or similar terrain.
 - (3) Level III: Maneuver brigade full scale dress rehearsal involving mounted or dismounted maneuver over terrain and distances similar to the area of operations.
- h) Rehearsal participants are indicated by type of rehearsal: [FM 5-71-3, p. 2-23]
- (1) Type A includes the following persons:
 - (a) Battalion commander.
 - (b) Battalion XO.
 - (c) Battalion S3.
 - (d) Battalion S2.
 - (e) Battalion primary staff (S1, S4).
 - (f) Battalion special staff (BMT, Bn SO, NBC NCO).
 - (g) Subordinate commanders including those of attached armor or mechanized infantry elements with their FSO/fire integration support team (FIST).
 - (h) Support platoon leader.

- (2) Type B includes the following persons:
- (a) Battalion commander.
 - (b) Battalion XO.
 - (c) Battalion S3.
 - (d) Battalion S2.
 - (e) Subordinate commanders including those of attached armor or mechanized infantry elements with their FSO/FIST.
- (3) Type C includes the following persons:
- (a) Battalion commander.
 - (b) Battalion S3.
 - (c) Battalion S2.
 - (d) Subordinate commanders including those of attached armor or mechanized infantry elements.
- 5d2 The engineer battalion conducts engineer battalion rehearsals.
- a) Engineer battalion commander controls and participates in the engineer battalion rehearsal. [FM 5-71-3, p. 1-8]
 - (1) Ensures that rehearsal meets his goals.
 - (2) Briefs participants (or gives guidance to the XO to brief) prior to the rehearsal.
 - (a) Introduces each participant with a brief description of duties and roles for the mission.
 - (b) Provides an overview:
 - 1. Missions and tasks to be rehearsed.
 - 2. Sequence of activities rehearsed.
 - 3. Rehearsal timelines (e.g., time to rehearse each event/phase of the mission).
 - 4. Description of rehearsal site.
 - (3) Exercises the MDMP under the conditions he expects to be faced with during mission execution:
 - (a) Identifies times, events, or enemy reactions during the mission which will require him to make decisions.
 - (b) Observes how his decisions are implemented by engineer battalion units and the staff.
 - (c) Identifies which decisions produce the outcome which supports his intent and desired endstate; and which decisions will not contribute to achieving his intent and desired endstate.
 - (d) Assesses utility of his decision support aids (e.g., DST, engineer execution matrix).
 - (4) Tracks the probable effect of engineer battalion actions to achieve the desired endstate (with engineer battalion S3's assistance).

- (5) Uses the DST and engineer execution matrix during rehearsals to test synchronization of engineer support. [FM 5-71-3, pp. D-5 through D-19]]
- b) The engineer battalion XO participates in battalion rehearsals. [FM 5-71-3, pp. 2-1 and 2-2; LL - CALL Newsletter No. 91-1]
 - (1) Prepares to lead and direct the engineer battalion, as the second in command, in the event of the absence of the engineer battalion commander.
 - (2) Ensures that engineer battalion staff is prepared to receive, evaluate, and disseminate information.
 - (3) Synchronizes combat multipliers to support the engineer battalion during the mission.
 - (4) Ensures that CS and CSS operations are synchronized with and support the concept.
 - (5) Describes the positioning and movement of engineer battalion CPs during the mission.
 - (6) Briefs participants in the place of the engineer battalion commander as directed.
 - (7) Ensures that all changes to the plan are recorded, coordinated, and that supporting products are updated (e.g., DST, engineer execution matrix).
- c) Engineer battalion S3 participates in battalion rehearsals. [FM 5-71-3, pp. 2-2 and 2-3]
 - (1) Describes overall operation.
 - (2) Ensures that engineer support is synchronized in terms of timing to support maneuver brigade movement and maneuver.
 - (3) Describes the positioning and movement of the engineer battalion command group during the mission.
 - (4) Assists the engineer battalion commander in tracking the effect of engineer battalion actions to achieve the desired endstate.
- d)
 - (5) Describes CP displacement ("jump") plan.
- Engineer battalion S2 participates in battalion rehearsals. [FM 5-71-3, p. 2-3]
 - (1) Portrays enemy actions and responses.
 - (a) Replicates all plausible and possible events and activities.
 - (b) Ensures that enemy actions are properly depicted to commander, subordinate commanders, and staff.
 - (2) Provides updated enemy and terrain information.
- e) Engineer battalion S4 participates in engineer battalion rehearsals. [FM 5-71-3, p. 2-3]
 - (1) Describes logistic support of engineer battalion.
 - (2) Portrays positioning and movement of CSS assets.
- f) Engineer battalion S1 participates in engineer battalion rehearsals.
 - (1) Describes personnel support of engineer battalion.
 - (2) Describes casualty evacuation.

- g) Engineer battalion NBC NCO participates in battalion rehearsals. [FM 5-71-3, pp. 2-3 and 2-4]
 - (1) Describes NBC decontamination support of the engineer battalion (e.g., sites, equipment, procedures if other than SOP).
 - (2) Describes NBC reconnaissance support of the engineer battalion.
 - (3) Portrays potential enemy use of chemicals against the engineer battalion.
 - (4) Describes employment of smoke and other obscurants.
- h) Subordinate commanders, company first sergeant (1SG), (for engineer battalion logistics rehearsals) and, if time and situation allow, subordinate platoon leaders participate in engineer battalion rehearsals.¹ [FM 5-71-3, p. 2-23; FN-NTC Engr OCs]
 - (1) Describe their missions/tasks.
 - (2) Demonstrate how they will accomplish their assigned mission/tasks.
- i) The engineer battalion commander, S3, and other key staff officers conduct rehearsal after action reviews to ensure that critical tasks are rehearsed to acceptable levels of competence. [FM 5-71-3, p. 5-10]
- j) The engineer battalion conducts multiple types of rehearsals, if time is available, including contingency plans. [FM 5-71-3, p. 2-18; FN-NTC Engr OCs]
 - (1) Engineer operations rehearsal.
 - (2) CSS/logistics rehearsal.
- 5d3 The engineer battalion commander coordinates and integrates the plan through BOS considerations during the rehearsals. [FM 5-71-3, p. 1-5].
 - a) Engineer battalion commander integrates intelligence requirements during the rehearsals. [FM 5-71-3, p. 1-6]
 - (1) The commander and S2 review the DST and enemy situation template to ensure that threat COAs are clear and brief backed.
 - (2) The S2 processes information and disseminates updated intelligence of enemy situation, terrain, and weather.
 - (3) Descriptions and locations of obstacles, fortifications, and known or potential contaminated areas and available NBC delivery systems.
 - (4) Threat locations (CPs, weapon systems), strengths, capabilities, probable boundaries, known vulnerabilities, and threat probable COAs and intentions.

¹ Engr Co commanders and 1SGs also attend the operations and CSS rehearsals respectively conducted by the maneuver Bn TF to which they are task organized. The HHC commander and 1SG attend the FSB rehearsal.

- b) The engineer battalion commander integrates maneuver and movement requirements during the rehearsals for when the engineer battalion is functioning as an engineer Bn TF. [FM 5-71-3, pp. 1-7, 5-9]
- (1) Subordinate units' maneuver plans are verified and integrated with the engineer Bn TF plan.
 - (a) Direct fire plans include:
 - 1 Units and weapon systems positions.
 - 2 Trigger lines for the initiation of direct fires.
 - 3 Disengagement and engagement criteria.
 - 4 Direct fire control measures.
 - (b) Maneuver plans include:
 - 1 Actions in the objective area.
 - 2 Actions on contact.
 - 3 Movement techniques.
 - 4 Loading/unloading aircraft and staging operations for air assault operations.
 - (c) Security and covering force plans:
 - 1 Passage of lines.
 - 2 Battle-handover.
 - 3 Integration of fire support.
 - 4 Reconstitution.
 - (2) Movement plans during the battle are verified.
 - (a) Routes are selected, reconnoitered, and marked.
 - (b) Movement to alternate and supplementary positions, including overwatch covering displacement, takes advantage of available cover and concealment.
 - (c) Direct and indirect fires are synchronized with movement and repositioning to preserve the force and to destroy or delay the enemy.
 - (d) Commitment of the reserve is checked to verify timing and to ensure that it can occupy a position to the flank or rear of the enemy without detection.
 - (3) Engineer Bn TF contingency plans, branches, and sequels are verified.
 - (4) Reactions to NBC air, artillery, and EW attacks are integrated to ensure force protection and reinforce the engineer Bn TF's ability to perform its mission on a contaminated battlefield.
 - (a) NBC reports and NBC warning and reporting system, including agent detection/identification and MOPP changes, are continuously assessed and disseminated.
 - (b) Decontamination sites and equipment are prepared to support hasty and deliberate decontamination.

- c) Engineer Bn TF units and soldiers can perform basic decontamination skills.
- The engineer battalion commander integrates M/CM/S requirements during the rehearsals. [FM 5-71-3, p. 1-7]
- (1) Mobility assets are task organized, positioned, and prepared to respond to potential obstacles and choke point congestion.
- (a) Engineer and subordinate units are prepared to conduct in-stride and deliberate breaching.
- (b) Timing and coordination for breaching is finalized to ensure synchronization between the support, breach, and assault forces.
- (c) Engineers and subordinate units are prepared to perform obstacle reconnaissance to confirm breach sites.
- (2) Countermobility plan is checked to ensure integration of direct and indirect fire for each obstacle.
- (3) Survivability positions for vehicles, personnel, and equipment are completed as planned.
- The engineer battalion commander integrates fire support requirements during the rehearsals. [FM 5-71-3, pp. 1-7 and 1-8]
- d) The engineer battalion commander integrates air defense requirements during the rehearsals. [FM 5-71-3, p. 1-8]
- e) Engineer battalion commander integrates CSS requirements during the rehearsals. [FM 5-71-3, Chap 6]
- f) CSS assets are prepared to provide planned supply, medical, and maintenance support to the engineer battalion during the mission without interfering with the operation.
- (1) Push packages of emergency resupplies are configured and ready.
- (2) Designated MSR and ASRs are reviewed to ensure that CSS assets can provide timely response.
- (3) Medical assets and operations are prepared to support the engineer battalion.
- (4) Vehicles and equipment are recovered, repaired, and returned to user or delivered to higher maintenance echelons during the preparation phase.
- (5) Maintenance assets are task organized and are prepared to provide support; unit maintenance collection point is prepared to displace and provide planned support.
- (6) Engineer battalion commander integrates command and control requirements during the rehearsals. [FM 5-71-3, Chap 2]
- g) The engineer battalion commander reviews the DST and engineer execution matrix to ensure that:
 - (a) Plan modifications are integrated.
 - (b) Mission details to achieve the commander's intent are adequately reflected.
 - (c) Engineer support is coordinated and integrated:
 - 1 Massed with sufficient redundancy to achieve desired results at the decisive point as designated by the maneuver brigade commander.
 - 2 Subordinate unit commanders backbrief their missions to the engineer battalion commander.

3. Planned command and control measures are reviewed by the engineer battalion commander, staff, and subordinate leaders to verify completeness of all engineer battalion documents; at minimum:
 - a. Maneuver graphics (e.g., phase lines, objectives, routes, check and coordination points).
 - b. DST.
 - c. Synchronization matrix.
 - d. Obstacle overlay.
- (2) CPs and staff are prepared to support the mission.
 - (a) Ready to receive, process, and disseminate information.
 - (b) Move and position to support the engineer battalion commander during the battle.
 - (c) Coordinate and synchronize combat multipliers.
 - (d) Exchange information with the maneuver brigade and adjacent units.
- 5e. The engineer battalion commander, as the maneuver brigade engineer, participates in maneuver brigade rehearsals. [FM 5-71-3, p. 2-1]
- 5e1 Describes movement and employment of engineer assets in support of the maneuver brigade.
- 5e2 Ensures that M/CM/S operations are synchronized with maneuver.
- 5f. The ABE participates in the maneuver brigade rehearsals. [FM 5-71-3, p. 2-2]
- 5f1 Coordinates with the Bde S3 to refine brigade plans and products.
- 5f2 Records decisions and changes to the brigade plan.
- 5f3 Provides relevant information to the engineer battalion CPs.
- 5g. The engineer battalion commander, as maneuver brigade engineer, attends maneuver Bn TF rehearsals whose assigned missions include critical aspects of M/S BOS. [FN - NTC Engr OCs]
- 5g1 Reviews adequacy of TF engineer plans for supporting the maneuver TF scheme of maneuver.

5g2 Assesses maneuver TF employment of engineer support.

OUTCOME 7 ASSESSMENT

OUTCOME 7: Soldiers and units are disciplined and are motivated to accomplish the mission. (Use Table 7)

Component A: Engineer battalion commander and staff take actions to promote discipline and motivation.	Adequate	Marginal	Not Adequate
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Assessment Statements

- The engineer battalion commander visits units most critical to the execution of the commander's intent and units with known leadership weaknesses.
 - Makes a subjective assessment of cohesion, morale, and esprit.
 - Expedites actions, fixes problems, and refines standards.
- The engineer battalion commander directs members of his staff to perform inspections and visits.
- The engineer battalion commander's efforts to maintain cohesion and discipline include:
 - Demanding compliance to standards and his guidance.
 - Taking corrective action when shortfalls in performance are noted.
 - Praising noteworthy performance, or recognizing it in other ways.
 - Displaying a calm presence to subordinates.
 - Setting a personal example of ethical behavior.
 - Providing precise, simple orders.
 - Ensuring that he and subordinates get sufficient rest.
- Stress prevention actions by engineer battalion leaders and staff include:
 - Complying with the engineer battalion sleep plan.
 - Reporting signs of stress or battle fatigue of others.
 - Speaking positively concerning the engineer battalion's missions, purposes and abilities.
 - Employing an information dissemination plan designed to quell and prevent rumors.
 - Ensuring that CSS systems meet legitimate needs (e.g., hot meals, mail, spare parts, ammunition)

Component B: Engineer battalion units and soldiers exhibit discipline and motivation; units perform cohesively.			
		Adequate	Not Adequate

- Morale and discipline indicators are within acceptable limits.
 - Uniform code of military justice violations.
 - Accident rates.
 - Absent without leave (AWOL) rates.
 - Sick call and stress casualties.
 - Inspector general complaints.
 - Feedback from the chaplain on leader and soldier concerns (indications of stress).
- Soldiers exhibit military courtesy and appearance.
- Soldiers work cooperatively within the unit and with other units to perform preparation tasks.
- Vehicles and equipment show evidence of consistent operator/crew maintenance.

OUTCOME 7 DIAGNOSTIC AID

OUTCOME 7: Soldiers and units are disciplined and are motivated to accomplish the mission.

Task Elements

Component A: Engineer battalion commander and staff take actions to promote discipline and motivation.

5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]

5a. The engineer battalion commander performs visits and inspections.

5a1 Engineer battalion commander provides command presence by exercising three key elements of battle command while conducting visits and inspection. [FM 5-71-3, p. 1-8]

a) Leadership: Exercised by inspiring and directing soldiers through personal contact. The commander is able to motivate soldiers with the desire to win through ensuring that their soldiers understand why they are engaged in a particular operation or COA and how it supports and is essential to the overall mission and intent.

c) Communication: The commander reinforces his intent with and focuses all subordinate leaders on a common goal. Establishing a climate conducive to open and honest communications, the commander expresses his guidance and directives and obtains concerns and issues from subordinate leaders and soldiers.

5a2 Inspections and visits are scheduled. [FM 5-71-3, p. 2-23]

5a4 The engineer battalion commander extends his command presence by directing members of his staff to perform inspections and visits (XO, CSM, or one or more engineer battalion staff members), and to inform him of refinements and adjustments to engineer battalion preparation activities that they have directed as well as problems that they have observed. [FM 5-71-3, pp. 2-1 through 2-4]

5b. The engineer battalion commander exercises leadership and maintains unit cohesion and discipline.

- 5b3 The commander displays a calm presence to subordinates while clearly delineating guidance; provides precise and simple orders and instructions. [FM 5-71-3, p. 1-8]
- 5b4 The commander maintains a moral presence by requiring subordinates to maintain appropriate standards. [FM 5-71-3, p. 1-8]
- Component B:** Engineer battalion units and soldiers exhibit discipline and motivation; units perform cohesively.²
5. **The engineer battalion commander directs and leads subordinate units.** [TRADOC Pam 11-9, Section IV; "Battle Command" pp. 7, 10; ARTEP 5-145-MTP; FM 5-71-3; FM 71-123, Chap 2, 3, 6]
- 5a. The engineer battalion commander performs visits and inspections.
- 5a3 The engineer battalion commander assesses the state of mission preparedness through inspections and visits. [FM 5-71-3, p. 2-23]
- e) When actions taken are not in accordance with decisions, SOP, Army standards, and the OPORD, the commander makes corrections.
 - f) Takes actions to ensure correction of noted problems.
 - g) Expedites actions, fixes problems, ensures compliance with guidance, and sets/refines standards.
- 5a4 The engineer battalion commander extends his command presence by directing members of his staff to perform inspections and visits (XO, CSM, or one or more engineer battalion staff members), and to inform him of refinements and adjustments to engineer battalion preparation activities that they have directed as well as problems that they have observed. [FM 5-71-3, pp. 2-1 through 2-4]
- 5b. The engineer battalion commander exercises leadership and maintains unit cohesion and discipline.
- 5b1 The commander checks that orders are executed and reinforces discipline by demanding compliance to standards and his guidance. [FM 5-71-3, p. 1-8]
- 5b2 The commander observes subordinates. [FM 5-71-3, p. 1-8]

² Observers should appraise engineer battalion personnel and units for indicators of morale, discipline, and cohesion.

- a) For indicators of shortfalls in performance or manner of performance; takes corrective action as necessary.
- b) For noteworthy performance that he can praise and recognize.

- 5b5 The commander monitors subordinates and self for degradation of mental and physical capability.
- c) Commander ensures that subordinate commanders, staff, and soldiers are rested and prepared for battle.

PROGRAM REVIEW MEASURES OF EFFECTIVENESS

The following tables and questions examine various aspects of directing and leading units during preparation for battle. Table 1 is about the operation and monitoring of communications nets. Table 2 is about the evaluation of the tactical situation for the commander's estimate. Table 3 concerns the updating of operations products during preparation. Table 4 is about timely distribution of orders. Table 5 provides a place to record whether all critical information was communicated among staff sections, key leaders, and headquarters of higher, adjacent and subordinate units. Table 6 addresses contributions of participants in the engineer battalion rehearsal. Table 7 provides a set of measures of the engineer battalion commander's overall leadership. Table 8 is concerned with the integration and coordination of elements of combat power available to the engineer battalion.

Table 1. Operation and monitoring of communications nets during preparation phase.

Leave the block unmarked if communication was maintained to a degree that all information was transmitted and received. If non-critical information was lost because of interruptions in communication, enter an "M" (for Marginal performance). If critical information was not received, tag the incident by entering a number in sequence (1, 2, 3, ...) and then indicate below the table the nature of the critical information that *was not* received (use METT-T factors to describe the information that was not received).

Communication Nets	TAC CP	Main CP	Rear CP
Engineer Battalion Command			
Armored Brigade O&I			
Armored Brigade Command			
Engineer Battalion A/L			

Briefly describe incidents of information not received:

Table 2. Modifying engineer plan during the preparation phase.

This table guides the assessment of the engineer battalion commander's and staff's performances in identifying information that has an impact on the engineer battalion's planned operation and their effectiveness in responding to identified situational change. A range of factors that are relevant to an engineer battalion's situation and normal parts of an estimate all organized by METT-T. The table is organized to record change to each METT-T factor, when the change was identified, and whether the response (e.g., change to the OPORD) was appropriate to the change in the situation. Rating begins with the second column. The first rating is whether the commander and staff had an accurate perception of each factor of the situation influencing the battle when the OPORD was issued. The second rating concerns whether factors of METT-T changed during the preparation phase before the start of the main battle. The third rating is concerned specifically with any change to the identified factors during or as a result of the rehearsal. The last column calls for an observer judgment about whether the response was appropriate to the situational change. For each case where the engineer battalion did not detect the change, did not react, or seemed to not react appropriately, describe the reaction or lack of reaction in the section following the table.

METT-T Factors	Accurate at OPORD?	Change during preparation phase?	Change during rehearsal?	Appropriate response?
Mission	Yes No	Yes No	Yes No	Yes No
Armored brigade commander's intent	Yes No	Yes No	Yes No	Yes No
Engineer brigade commander's intent	Yes No	Yes No	Yes No	Yes No
Engineer battalion commander's intent	Yes No	Yes No	Yes No	Yes No
Maneuver brigade concept of operations	Yes No	Yes No	Yes No	Yes No
Engineer battalion mission	Yes No	Yes No	Yes No	Yes No
Engineer task organization	Yes No	Yes No	Yes No	Yes No
Other:				

Table 2. (Continued)

METT-T Factors		Accurate at OPORD?	Change during preparation phase?	Change during rehearsal?	Appropriate response?
Enemy Situation					
Engineer capabilities		Yes No	Yes No	Yes No	Yes No
Activity		Yes No	Yes No	Yes No	Yes No
Strength		Yes No	Yes No	Yes No	Yes No
Locations		Yes No	Yes No	Yes No	Yes No
Probable enemy engineer COAs		Yes No	Yes No	Yes No	Yes No
Other:		Yes No	Yes No	Yes No	Yes No
Friendly Situation					
Availability of systems and equipment, to include mobility assets (e.g., TF mine plows)		Yes No	Yes No	Yes No	Yes No
Locations, activities, and intentions of adjacent units		Yes No	Yes No	Yes No	Yes No
Brigade subordinate unit plans and preparation activities		Yes No	Yes No	Yes No	Yes No
Engineer battalion subordinate unit plans and preparation activities		Yes No	Yes No	Yes No	Yes No
Status of construction of obstacles, fighting positions, and protective positions		Yes No	Yes No	Yes No	Yes No
Other:		Yes No	Yes No	Yes No	Yes No

Table 2. (Continued)

METT-T Factors	Accurate at OPOD?	Change during preparation phase?	Change during rehearsal?	Appropriate response?
Terrain				
Weather effects on visibility	Yes No	Yes No	Yes No	Yes No
Weather effects on movement	Yes No	Yes No	Yes No	Yes No
Weather effects on construction of obstacles and positions	Yes No	Yes No	Yes No	Yes No
Terrain effects on movement	Yes No	Yes No	Yes No	Yes No
Terrain effects on breaching and construction of obstacles and positions	Yes No	Yes No	Yes No	Yes No
Other:	Yes No	Yes No	Yes No	Yes No
Time				
Time to complete engineer tasks for brigade preparation (e.g., positions, obstacles)	Yes No	Yes No	Yes No	Yes No
Time for units to complete all preparations	Yes No	Yes No	Yes No	Yes No
Time for movement/repositioning of engineer assets	Yes No	Yes No	Yes No	Yes No
Other:	Yes No	Yes No	Yes No	Yes No
Commander's overall assessment of METT-T	Yes No	Yes No	Yes No	Yes No
Engineer battalion's ability to execute mission	Yes No	Yes No	Yes No	Yes No

Table 3. Updates of operations products during preparation phase.

This table is intended to show whether each CP maintained accurate and current operations products. Products listed may be employed by the battalion headquarters to update and collocate information so that appropriate actions may be taken to conduct a synchronized battle. Some of these items are not required by doctrine or unit TSOP, so circle "NA" if the item was not required by the TSOP or the particular CP. If the item was required, then circle "Yes" if it was continually updated to be complete, accurate, and current, or "No" if it wasn't. On the following page, briefly state the consequences of any inaccurate or out-dated information reflected on a particular product. (There may be no consequences or impact in some instances.)

Operations products that may be employed by the battalion	Command Grp	TAC	Main CP	Rear CP
Operations overlay (Engineer battalion, armored brigade, and adjacent units)	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Obstacle graphics	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Situation template overlay	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Event template overlay	NA Yes No	NA Yes No	NA Yes No	NA Yes No
MCOO	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Fire support overlay	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Decision support template	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Synchronization matrix	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Engineer execution matrix	NA Yes No	NA Yes No	NA Yes No	NA Yes No
CSS overlay/map	NA Yes No	NA Yes No	NA Yes No	NA Yes No
NBC overlay	NA Yes No	NA Yes No	NA Yes No	NA Yes No
Situation posted on appropriate maps	NA Yes No	NA Yes No	NA Yes No	NA Yes No

Table 3. (Continued)

Table 4. Times orders were received.

This table concerns the timeliness of WARNOs and FRAGOs in cases where the engineer battalion changes the plan during the preparation phase. (Tables 2 and 3 complement Table 4). First, record the date and time when the commander decided to change the plan. Then, write in designators for additional subordinate elements, brigade units, adjacent units, and supporting units. Identify which units should receive WARNOs and FRAGOs. Finally, list the date and time each unit received each order.

Dates/times engineer battalion commander decided to change the plan: _____

Unit	WARNO(s)	Initial FRAGO	Final FRAGO (If Issued)
Engineer company (Co) A	Date: Time:	Date: Time:	Date: Time:
Engineer Co B	Date: Time:	Date: Time:	Date: Time:
Engineer Co C	Date: Time:	Date: Time:	Date: Time:
Engineer HHC	Date: Time:	Date: Time:	Date: Time:
Engineer Battalion Staff	Date: Time:	Date: Time:	Date: Time:
ABE	Date: Time:	Date: Time:	Date: Time:
Engineer Brigade	Date: Time:	Date: Time:	Date: Time:

Table 4. (Continued)

Unit	WARNO	Initial FRAGO	Final FRAGO (If Issued)
FSB	Date: Time:	Date: Time:	Date: Time:
Other Bde Units:	Date: Time:	Date: Time:	Date: Time:
	Date: Time:	Date: Time:	Date: Time:
Adjacent Units:	Date: Time:	Date: Time:	Date: Time:
	Date: Time:	Date: Time:	Date: Time:
Attached/Supporting Units:	Date: Time:	Date: Time:	Date: Time:
	Date: Time:	Date: Time:	Date: Time:

Table 5. Communication among staff sections, higher, adjacent, and subordinate units.

Complete this table by tagging each incident in which critical information was NOT communicated from one element to another. Engineer Bn key personnel are indicated in the horizontal row at the top of the table. Listed vertically in the left column are the same positions followed by key personnel external to the battalion. Each occurrence of failure to communicate should be given an identification number on the chart for reference purposes. Insert the identifying number (in sequence: 1, 2, 3,...) in the appropriate cell. Following the table is space for notes on the nature of the problem. **EXAMPLES OF USE:** a) If in the first incident of failure to communicate during an exercise, the Bn S2 had failed to inform the Bn commander and the Bn S3 about change to enemy capabilities, the observer would annotate "1" in the cells at the intersection of the S2 vertical column and the horizontal row for the Bn commander and the Bn S3. In the foregoing example, the observer might also record at the end of the table, "1: Bn S2 did not appear to recognize significance of movement forward of enemy smoke generator unit." b) If the second incident of failure to communicate was that the engineer Bn S4 had not provided information to an engineer company commander, the observer would annotate "2" in the cell at the intersection of the Bn S4 column and the engineer company's row. The clarifying note would show "2: Bn S4 failed to provide warning information about emergency supply of Class IV to TF ____." c) If in a third incident, the engineer Bn S3 had failed to communicate with the Bn HHC about a support matter, the observer would annotate "3" at the intersection of the Bn S3 vertical column and the Bn HHC row. The clarifying note at the bottom of the table might show, "3: Bn S3 radio problem prevented timely transmission of information about a decontamination site opening at Grid ____." d) If the fifth incident was the inability of the Engr Bde S3 to provide information on additional support to the Bn S3, the observer would annotate "5" in the cell formed at the intersection of the Engr Bde S3 row and the Bn S3's column. The note might reflect "5: Additional bulldozers arrived without warning. Unknown at this time why Engr Bde S3 failed to inform Bn S3."

Table 5. (Continued)

	Engr Bn Cdr	Engr Bn CSM	Engr Bn S1	Engr Bn S2	Engr Bn S3	Engr Bn S4	Engr Bn BMT	Engr Bn XO	Engr Bn Bn SO	Engr Co A Cdr	Engr Co B Cdr	Engr Co C Cdr	HHC Cdr
Internal communications:													
Engr Bn Cdr													
Engr Bn CSM													
Engr Bn S1													
Engr Bn S2													
Engr Bn S3													
Engr Bn S4													
Engr Bn BMT													
Engr Bn XO													
Engr Bn Bn SO													
Engr Co A Cdr													
Engr Co B Cdr													
Engr Co C Cdr													
HHC Cdr													
External communications:													
Armored Bde Cdr													
Armored Bde S1													
Armored Bde S2													
Armored Bde S3													
Armored Bde S4													
Armored Bde ABE													
Armored Bde													
FSO/FSF													
FSB Support Ops													
Division Engr/Engr Bde Cdr													
Engr Bde XO													

Note: FSE=fire support element; Ops=operations.

Table 5. (Continued)

	Engr Bn Cdr	Engr Bn CSM	Engr Bn S1	Engr Bn S2	Engr Bn S3	Engr Bn S4	Engr Bn BMT	Engr Bn XO	Engr Bn Bn SO	Engr Co A Cdr	Engr Co B Cdr	Engr Co C Cdr	HHC Cdr
External communications: (cont'd)													
Engr Bde S3													
Supporting Engr Units													
Adjacent Units													
Other Units													

Briefly describe incidents of information not received (what METT-T information was not received and what happened because of this failure to communicate the information):

Table 6. Engineer battalion rehearsal participants.

This table is based on doctrinal descriptions of rehearsals. It reflects likely participants in an engineer battalion rehearsal and their roles or expected contribution to the conduct and the outcome of the rehearsal. This table was designed to capture rehearsal participants' contribution to the rehearsal. For each potential participant in the brigade rehearsal, indicate whether he or she was present, whether the projected contributions were made, and if they were adequate.

Participant	Present	Contribution	Adequate
Engineer Battalion Cdr	Yes No	Control and participate. Make decisions relevant to refinement of plans. Test synchronization through DST and engineer execution matrix. Exercise decision-making process anticipated for mission.	Yes No NA
Subordinate Cdrs:			
Co A	Yes No	Describe their mission/tasks. Demonstrate how their units will accomplish their mission/tasks.	Yes No NA
Co B	Yes No		Yes No NA
Co C	Yes No		Yes No NA
Engineer Battalion XO	Yes No	Describe positioning and movement of CPs. Ensure CS and CSS operations are integrated and coordinated. Ensure changes to plan were recorded and products updated.	Yes No NA
Engineer Battalion S3	Yes No	Describe overall operation. Synchronize timing of engineer battalion to support maneuver Bde. Describe positioning and movement of Engr Bn command group.	Yes No NA
Engineer Battalion S2	Yes No	Portray enemy actions and responses. Provide updated enemy and terrain information.	Yes No NA
Engineer Battalion S4	Yes No	Describe CSS of engineer battalion. Portray positioning and movement of CSS assets.	Yes No NA

Table 6. (Continued)

Participant	Present	Contribution	Adequate
NBC NCO	Yes No	Describe NBC decontamination sites, equipment, and procedures. Describe NBC reconnaissance support. Describe employment of smoke and other obscurants. Portray potential enemy use of chemicals.	Yes No NA
ABE	Yes No	Describe maneuver brigade operations and requirements for engineer support. Identify refinements in the engineer plan that have an impact on the maneuver brigade.	Yes No NA

Table 7. Engineer battalion overall leadership.

This table is designed to capture aspects of the engineer battalion commander's leadership during mission preparation. Process statements are used to describe an aspect of the planning process. A numerical scale is included to identify the degree of proficiency to which the process was accomplished. Circling "1" on the scale means the task was not accomplished. ("2" and "3" are provided to differentiate between extremes.) Circling "2" means the task was poorly accomplished; "3" indicates the task was accomplished but requires training. Circling "4" means the task was performed in accordance with (IAW) doctrine. The paragraphs under the process statements are "anchors" to guide the assessor when determining whether the process statements were accomplished. The "anchors" are not meant to be all inclusive.

Engineer battalion commander did not check to see that his orders were carried out.	1	2	3	4	Engineer battalion commander checked to see that his orders were carried out.
Engineer battalion commander was not receptive to new information.	1	2	3	4	Engineer battalion commander sought and accepted new information.
Engineer battalion commander guidance and directives to staff had too little or too much detail.	1	2	3	4	Engineer battalion commander gave the staff the guidance and directives they needed.
Engineer battalion commander did not keep soldiers informed of the current situation.	1	2	3	4	Engineer battalion commander kept soldiers informed of the current situation.
Engineer battalion commander did not share hardships and dangers of his soldiers.	1	2	3	4	Engineer battalion commander shared hardships and dangers of his soldiers.
Engineer battalion commander did not ensure that soldiers have the opportunity to rest and eat as conditions permitted.	1	2	3	4	Engineer battalion commander ensured that soldiers had the opportunity to rest and eat as conditions permitted.

Table 8. Integration and coordination of combat, combat support, and combat service support.

Intent of this table is to record the Engr Bn commander's and staff's ability before the battle to integrate and coordinate the elements of combat power represented by combat, combat support, and combat service support capabilities available to the Engr Bn. "Integrated" and "coordinated" mean that the activities of the available elements of combat power can each be brought to bear on the battlefield at the appropriate times with the result that each is available to influence mission accomplishment as envisioned by the direct support (DS) Engr Bn commander. The commander's and staff's actions during the preparation phase must cause the elements of combat power to be deconflicted vertically, horizontally, and within the BOS to ensure that they can be brought together in a harmonious order or relationship during the battle. (Subsequent to this integration and coordination, the brigade commander will synchronize the capabilities of all of the elements of the brigade combat team.) Circle the response appropriate for the integration and coordination for each element of combat power. For those elements of combat power listed in the table but not available to the Engr Bn, the observer should circle "N/A".

Considerations	Integrated and Coordinated?	
Intelligence, e.g.:	Yes	No
<ul style="list-style-type: none"> Engineer reconnaissance in TF areas of operations (AOs) Information acquisition 	N/A	
Fire Support, e.g.:	Yes	No
<ul style="list-style-type: none"> Fires planning for engineer work sites, breaches Family of scatterable mines (FASCAM) planning Obstacle locations and targets 	N/A	
Command and Control, e.g.:	Yes	No
<ul style="list-style-type: none"> Communication networks Retransmission equipment positioning CPs' locations Locations of Bn Cdr (demands of Engr Bn command vs Bde Engr) 	N/A	

Table 8. (Continued)

Considerations	Integrated and Coordinated?
Command and Control, e.g.: (cont'd) <ul style="list-style-type: none"> • Rehearsals' schedules • Attachments and detachments • LNOs • Hand-off of completed obstacles 	Yes N/A No
Mobility and Survivability, e.g.: <ul style="list-style-type: none"> • Mobility operations: <ul style="list-style-type: none"> • Smoke • Countermobility operations: <ul style="list-style-type: none"> • Obstacle siting • Initiation of obstacles • Survivability operations: <ul style="list-style-type: none"> • Type positions • Decontamination sites 	Yes N/A No
Air Defense, e.g.: <ul style="list-style-type: none"> • Air defense artillery (ADA) protection • Small arms for air defense (SAFAD) 	Yes N/A No
Combat Service Support, e.g.: <ul style="list-style-type: none"> • Delivery of CL IV/V (barrier) • Casualty evacuation • Recovery and repair of equipment • Emergency resupply 	Yes N/A No

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- CALL Newsletter No. 88-3: Heavy Forces, Fall 1988
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Appendix A

ACRONYMS AND ABBREVIATIONS

1SG	first sergeant
2IC	second in command
AAR	after action review
ABE	assistant brigade engineer
AD	air defense
ADA	air defense artillery
A/L	administrative/logistics
AN	author note
AO	area of operations
ARI	U.S. Army Research Institute for the Behavioral and Social Sciences
ARTEP	Army Training and Evaluation Program
ASL	authorized stockage list
ASR	available supply rate; alternate supply route
AVLO	aviation liason officer
AWOL	absent without leave
BCBL	Battle Command Battle Laboratory
Bde	brigade
BF	battlefield function
BMT	battalion maintenance technician

Bn	battalion
BOS	battlefield operating system(s)
BSA	brigade support area
C3	command, control, and communications
CCF	critical combat function
CCIR	commander's critical information requirements
Cdr	commander
CL	Class
CL III	petroleum, oils, lubricants
CL IV	construction and barrier material
CL V	ammunition
CL VIII	medical material
CL IX	repair parts and components
CMLO	chemical officer
Co	company
COA	course of action
COMSEC	communications security
CP	command post
CPX	command post exercise
CS	combat support
CSM	command sergeant major
CSS	combat service support
CTC	Combat Training Center

DS	direct support
DST	decision support template
DTDD	Directorate of Training and Development Doctrine
EBA	engineer battlefield assessment
EEFI	essential elements of friendly information
Engr	engineer
EPW	enemy prisoner of war
EW	electronic warfare
FA	function analysis; field artillery
FASCAM	family of scatterable mines
FFIR	friendly forces information requirements
FIST	fire integration support team
FM	field manual
FN	field note
FRAGO	fragmentary order
FSB	forward support battalion
FSE	fire support element
FSO	fire support officer
FTX	field training exercise
FXXITP	Force XXI Training Program

HHC	headquarters and headquarters company
HQ	headquarters
IAW	in accordance with
IPB	intelligence preparation of the battlefield
IR	information requirements
ITTBBST	Innovative Tools and Techniques for Brigade and Below Staff Training
LL	lessons learned
LNO	liaison officer
M/CM/S	mobility/countermobility/survivability
MCOO	modified combined obstacle overlay
MDMP	military decision-making process
METT-T	mission, enemy, terrain, troops, and time available
MIJI	meaconing, interference, jamming, and intrusion
MOPP	mission oriented protective posture
MOS	military occupational specialty
MQS	military qualification standards
M/S	mobility/survivability
MSR	main supply route
MTP	mission training plan
NAI	named area of interest
NBC	nuclear, biological, and chemical

NMC	non-mission capable
NTC	National Training Center
OBSTINTEL	obstacle intelligence
OC	observer-controller
OCOKA	observation and fields of fire, cover and concealment, obstacles, key terrain, and avenues of approach
O&I	operations and intelligence
OPFOR	opposing force
OPORD	operations order
Ops	operations
OPSEC	operations security
Pam	Pamphlet
PIR	priority intelligence requirement
PLL	prescribed load list
R&S	reconnaissance and surveillance
RACO	rear area combat operations
S1	Adjutant/Personnel Officer, Brigade and Battalion Staff
S2	Intelligence Officer, Brigade and Battalion Staff
S3	Operations and Training Officer, Brigade and Battalion Staff
S4	Supply/Logistics Officer, Brigade and Battalion Staff
SAFAD	small arms for air defense

SCATMINE	scatterable mine
SO	signal officer
SOEO	scheme of engineer operations
SOI	signal operations instructions
SOP	standing operating procedure
TAC	tactical
TAI	target area of interest
TEWT	tactical exercise without troops
TF	task force
TOE	table of organization and equipment
TRADOC	U.S. Army Training and Doctrine Command
TSOP	tactical standing operating procedures
USAARMC	U.S. Army Armor Center
USAARMS	U.S. Army Armor School
USAES	U.S. Army Engineer School
WARNO	warning order
XO	executive officer